Response to Comment R1-28

Quantification of take has been discussed in Master Response 9.

Response to Comment R1-29

Except where noted (e.g., Gerstung 1997), all comments regarding the juvenile salmonid population estimates were observations referring to the eight streams that were surveyed as indicated in the Plan and discussed in AHCP/CCAA Appendix C-7. These estimates were not intended to represent the entire coastal northern California area. The Services acknowledges that these surveys are not of a sufficient period to infer trends in salmonid populations.

Response to Comment R1-30

The statement in the 1st bullet that the commenter refers to was intended to point out that observed population estimates could be sensitive to many factors, *which may include* winter flows and ocean conditions. This was intended to be a non-exclusive list - other factors, such as habitat conditions, also might affect coho salmon populations.

Response to Comment R1-31

Comment noted. However, the Services believe that there is a high degree of variability, even with only three years of trapping data. Therefore, the text will remain.

Response to Comment R1-32

Various authors have reported that tailed frogs are sensitive to the potential impacts of timber harvesting, but the specific

R1-27 ¶ 1. The document acknowledges the presence of 303(d) watersheds and the TMDL process yet fails to address how it will meet the TMDL standards that are being developed or will be developed during the life of the incidental permit. Please address how the TMDL process will be incorporated into the incidental permit process.

R1-28 Page 4-39, Sec. 4.3.7. Fish Presence/Absence Surveys
¶ 1 - 3. Without supporting data an acceptable level of take cannot be established.
No THP's or other covered activities should be conducted until after adequate surveying has been completed.

R1-29 Page 4-35, Sec. 4.3.8. Summer Juvenile Salmonid Population Estimates
¶ 1. This is a very small sample size to be basing population estimates for the entire coastal northern California area being proposed for coverage under this HCP. It has also looked at less then 2 generations of coho.

R1-30 1st Bullet. The document rightly states that the surveys have not been conducted long enough to detect any trends yet it immediately tries to attribute any declines to oceanic conditions or poor winter flows. It fails to acknowledge that it could also be due to poor rearing conditions for smolts.

R1-31 Page 4-36, Sec. 4.3.9. Out-migrant Smolt Trapping
¶ 1. Three years of out-migrant smolt trapping is an insufficient data set to make any inferences from. The final sentence should be stricken.

R1-32 Page 4-37, Sec. 4.3.11.1. Tailed Frogs
This section seems to acknowledge that little is known regarding the effects of timber harvest on tailed frogs. Given this how can the incidental take of this species be evaluated or even documented?

R1-33 Page 4-38-39, Sec. 4.3.11.2. Southern Torrent Salmanders
Similar to the previous section on the tailed frog this section seems to also acknowledge that little is known regarding the effects of timber harvest on southern torrent salamanders. Given this how can the incidental take of this species be evaluated or even documented?

R1-34 Page 4-40, Sec. 4.4.1.3. Geology.
¶ 4. Recommend that the "inherently weak serpentinite…bedrock" of the Klamath Mountains be scheduled for detailed mapping in light of the absence of published mapping.

R1-35 Page 4-180 – 4-181, Sec. 4.4.11.9. Assessment summary.
¶ 1 through 3. This section states that the Eel River HPA should be "considered the lowest priority for conservation efforts", in part because of the current low ownership by Simpson in this HPA. However, this HPA is among the highest in

mechanisms and magnitude of the impact have not been quantified. Therefore, the monitoring approach using an experimental BACI design was specifically developed to estimate the impact of timber harvesting on tailed frog populations. See also Master Response 9.

Response to Comment R1-33

See the response to Comment R1-32, but with reference to implementation of experimental BACI studies for torrent salamanders.

Response to Comment R1-34

The mass wasting assessment (see AHCP/CCAA Section 6.2.5.3.4) will address the entire Plan Area, including the Klamath Mountains geomorphic province where it overlaps the Plan Area. That analysis is expected to include geologic mapping at the discretion of the supervising geologist.

Response to Comment R1-35

These concerns have been addressed in Master Response 3, regarding cumulative effects and watershed-level analysis. See also AHCP/CCAA Section 7.2.6.1, 7.3 and 7.4, regarding the evaluation of limiting factors.

Response to Comment R1-36

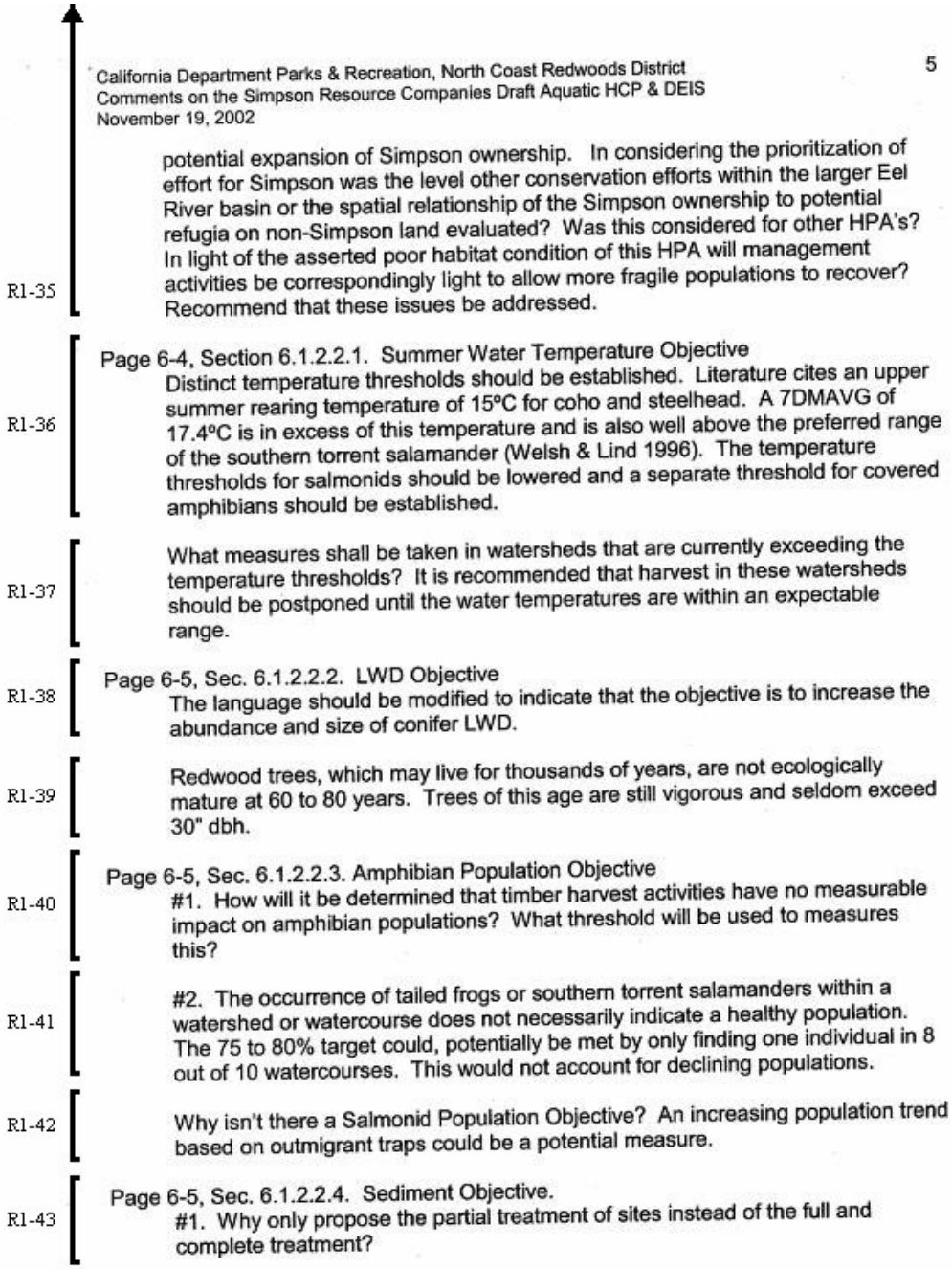
See the response to Comment G3-62. Using a single water temperature value (such as MWAT) to establish biological objectives or thresholds would not be appropriate because natural variations in water temperature due to geographic location, climatic factors, and drainage area above a site would not be taken into account. As shown in AHCP/CCAA Figure 6-11, the headwater amphibian species are currently found in water temperatures that are consistent with studies conducted in pristine habitats and that are substantially lower than those for the fish species. The thresholds are scaled accordingly so that the headwater amphibians found in small sub-basins have lower thresholds than those for the fish species. See related discussion in AHCP/CCAA Sections 4.3.1.1 and 6.3.5.2.1.

Response to Comment R1-37

See AHCP/CCAA Section 6.2.6.1 and Figure 6.8 of the Plan, as well as the discussion in AHCP/CCAA Section 6.3.5.1.2, for a description of the process proposed for responding to yellow and red light thresholds and feedback mechanisms for adaptive management. If at the time of Plan adoption, there are yellow or red light thresholds being triggered, then the process described therein will be followed.

Response to Comment R1-38

Comment noted. AHCP/CCAA Section 6.1.2.2.2 specifically states that the LWD objective is, in part, to "*increase the abundance and size class of in-channel and potential LWD*."



potential expansion of Simpson ownership. In considering the prioritization of effort for Simpson was the level other conservation efforts within the larger Eel River basin or the spatial relationship of the Simpson ownership to potential refugia on non-Simpson land evaluated? Was this considered for other HPA's? In light of the asserted poor habitat condition of this HPA will management activities be correspondingly light to allow more fragile populations to recover? Recommend that these issues be addressed.

R1-35

Page 6-4, Section 6.1.2.2.1. Summer Water Temperature Objective
Distinct temperature thresholds should be established. Literature cites an upper summer rearing temperature of 15ºC for coho and steelhead. A 7DMAVG of 17.4ºC is in excess of this temperature and is also well above the preferred range of the southern torrent salamander (Welsh & Lind 1996). The temperature thresholds for salmonids should be lowered and a separate threshold for covered amphibians should be established.

R1-36

What measures shall be taken in watersheds that are currently exceeding the temperature thresholds? It is recommended that harvest in these watersheds should be postponed until the water temperatures are within an expectable range.

R1-37

Page 6-5, Sec. 6.1.2.2.2. LWD Objective
The language should be modified to indicate that the objective is to increase the abundance and size of conifer LWD.

R1-38

Redwood trees, which may live for thousands of years, are not ecologically mature at 60 to 80 years. Trees of this age are still vigorous and seldom exceed 30" dbh.

R1-39

Page 6-5, Sec. 6.1.2.2.3. Amphibian Population Objective
#1. How will it be determined that timber harvest activities have no measurable impact on amphibian populations? What threshold will be used to measures this?

R1-40

#2. The occurrence of tailed frogs or southern torrent salamanders within a watershed or watercourse does not necessarily indicate a healthy population. The 75 to 80% target could, potentially be met by only finding one individual in 8 out of 10 watercourses. This would not account for declining populations.

R1-41

Why isn't there a Salmonid Population Objective? An increasing population trend based on outmigrant traps could be a potential measure.

R1-42

Page 6-5, Sec. 6.1.2.2.4. Sediment Objective.
#1. Why only propose the partial treatment of sites instead of the full and complete treatment?

R1-43

Response to Comment R1-39

Comment noted.

Response to Comment R1-40

See Master Response 12.

Response to Comment R1-41

As suggested, the presence of tailed frogs and southern torrent salamanders in a watercourse does not, in and of itself, indicate a healthy population or the occurrence of such species across the Plan Area, and is not intended to be used to indicate anything about individual populations. The occurrence of these headwater amphibians across the Plan Area is intended to indicate long-term population trends. Given the limited dispersal ability of these amphibians, if individual populations are declining because of timber harvest, or for any other reason, sub-populations will begin to go extinct after some period. Consequently, the number of sub-basins or watercourses in which these species can be found would eventually decrease. If there is no evidence of a decrease (or possibly an increase) in their occurrence, it can be concluded that individual sub-populations are not in decline.

Response to Comment R1-42

Population objectives were established for the headwater amphibians, because they spend their entire lives within the Plan Area and their habitat, good or bad, is largely within Green Diamond's control. However, the populations of anadromous salmonids are influenced by many factors, many of which are beyond Green Diamond's control or influence (e.g., ocean conditions). Therefore, it is possible that a population objective for salmonids would not be met regardless of benefits provided through Plan implementation in the freshwater environment.

Response to Comment R1-43

The application does not propose to partially treat each site. The "more than 46 percent" treatment refers to the amount of sediment, as a percentage of the total, which is expected to be treated during the acceleration period of the road implementation plan (see AHCP/CCAA Section 6.2.3.2.1).

Response to Comment R1-44

The goal of 70 percent reduction in sediment input has been discussed in Master Response 16. Also, please note that obligations imposed in the Plan supplement other applicable legal requirements (see AHCP/CCAA Section 1.4), and do not excuse Green Diamond from compliance with any other applicable Federal or State requirements. Baseline conditions, have been discussed in Master Response 1.

Response to Comment R1-45

The goal of 70 percent reduction in sediment input, including its relationship to the covered species and their habitats, has been discussed in Master Response 16.

Response to Comment R1-46

In cases where road-related work pursuant to the Plan and under the circumstances described by the commenter, Green Diamond would obtain any necessary approvals and comply with any applicable agreements with involved landowners, including the State Parks, where applicable. The measure will not be expanded to require roadwork under circumstances beyond those described in AHCP/CCAA Section 6.2.3.

Response to Comment R1-47

See Master Response 18. Further, "where applicable" means, as is suggested in the comment, "where it exists."

Response to Comment R1-48

R1-44 #2. Is the goal of 70% sediment reduction consistent with all TMDL documents for the affected HPA's? Is the goal property wide or is there a habitat quality factor in reduction for individual HPA's? What is the original period of reference to determine the 70% reduction? Recommend that the AHCP be consistent with all governing state and federal laws and guidelines, that habitat quality be a scaling factor in the prioritization and that sediment reductions be related to historical background levels, not reductions in the worst case management levels.

R1-45 How does the 70% reduction in sediment delivery relate to healthy populations of covered species?

R1-46 Page 6-6, Sec. 6.2. Simpson's Operating Conservation Program.
¶ 3. For State Parks lands, where there is no exclusive easement reserved for Simpson or for areas where an exclusive easement exists but work may have off site impacts, recommend that Simpson conduct all road related work in a manner consistent with State Park policies and practices only after approval from the relevant State Park authority.

R1-47 Page 6-7, Sec. 6.2.1.1. Class I RMZ Width
Provide a biological justification for the 150-foot RMZ. The RMZ should be measured from the CMZ where it exists not "where applicable". Define "where applicable". What would not be applicable?

R1-48 Page 6-7, Sec. 6.2.1.2. Conservation Measures within Class I RMZs
Text should be modified to state "*coincide with harvest of the adjacent stands*." The existing language does not account for uneven-aged harvesting in STA's that are adjacent to RMZ's.

R1-49 Page 6-7, Sec. 6.2.1.1.1. Inner Zone RMZ Width
The proposed inner zone widths in the AHCP are less than those of the Forest Practice Rules (FPR). How do protective measures less than the FPR fully minimize and mitigate impacts to covered species to the maximum extent practicable? Are the FPR not practicable?

R1-50 Page 6-7, Sec 6.2.1.2.1. Overstory Canopy Closure
#'s 1 & 2. Should be modified to require 85% *conifer* overstory canopy closure and 70% *conifer* overstory canopy respectively. Also recommend that where these conifer overstory canopy closure retention standards do not currently exist that harvesting of conifers not be allowed.

R1-51 Page 6-8, Sec. 6.2.1.2.3. Conifer Density Requirements
This could result in habitat type conversions within riparian zones. Harvesting should not be allowed within RMZ's unless the stand is fully stocked with conifers. Any harvesting within RMZ's should not result in potential habitat

Except for the exemption specified in CFPR Section 916.9.(x), Green Diamond will comply will all other applicable forest practice rules governing timber harvesting. Should STA application require the deployment of uneven aged management systems adjacent to Class I RMZs, the timing of the harvest will coincide with the even-aged harvesting deployed outside the STA.

Response to Comment R1-49

The Plan supplements the requirements of other applicable legal requirements (see AHCP/CCAA Section 1.4), including CFPRs. Plan approval and issuance of the Permits would not excuse Green Diamond from complying with applicable requirements of the CFPRs. Refer to the discussion of the CFPRs in Master Response 7. The ESA requires the Services to determine that an ITP applicant "will, to the maximum extent practicable, minimize and mitigate the impacts" of incidental takings (50 CFR Sections 17.32(b)(2)(B), 222.307(c)(2)(ii)). The Services emphasize that this requirement applies to the Operating Conservation Program as a whole, not to individual prescriptions on a measure-by-measure basis; no measure-by-measure comparison is necessary. Further, the CFPRs contain provisions for incorporating HCP provisions into THPs, and those provisions will be followed. For additional discussion of the CFPRs, see Master Response 7 and responses to Comments G4-27, G4-28, R1-49, and R1-70, among others.

Response to Comment R1-50

It is commonly known that there are a variety of functions performed by riparian zones and that a mix of conifer and deciduous trees provides for a fully functioning riparian system. It is acknowledged that conifers are particularly important to provide large and long-lasting LWD. This function of the riparian zone is addressed by the "likely to recruit" language (see AHCP/CCAA Section 6.2.1.2.5 and Master Response 5). In addition, AHCP/CCAA Sections 6.2.1.2.3 and 6.3.1.1.1 identify the minimum conifer retention standards, which preclude harvesting conifers when the stand is predominately made up of deciduous trees.

Response to Comment R1-51

See the response to Comment R1-50. The commenter appears focused on a single conservation measure in isolation, rather than on the Operating Conservation Program as a whole, to project future RMZ conditions. The requirement of 15 conifers >16 inches/acre is not a target of how many conifers would be retained in the RMZs. Instead, it is a minimum number that could occur if the overstory canopy retention standards are met, and most importantly, the "likely to recruit" standard is met for every conifer in the RMZ. This measure was included for some isolated regions within the Plan Area where the riparian areas in Class I streams are almost devoid of conifers. See Master Response 5, regarding "likelihood to recruit." Finally, if this standard were implemented, it would not lead to a "habitat type conversion." The standard was based on a calculation of the current number of conifer stems in an average conifer stand.

Response to Comment R1-52

See Master Response 5.

Response to Comment R1-53

See Master Response 5.

Response to Comment R1-54

See Master Response 5.

Response to Comment R1-55

See Master Response 5.

Response to Comment R1-56

See Master Response 5.

Response to Comment R1-57

The Plan addresses this concern in AHCP/CCAA Sections 6.2.3.11.5 and 6.3.3.9.

Response to Comment R1-58

The selection of specific prescriptions, including the use of native seeds and weed-free mulches, is a matter of the permits applicant's discretion (HCP Handbook at 3-19). The Services' role during the development of a conservation program is to be "prepared to advise", and to judge its consistency, as a whole, with the ESA approval criteria once the application in complete (HCP Handbook at 3-6 and 3-7). The ESA does not require that any particular measure be adopted or imposed, but only that its criteria for Permit

R1-51 conversions. What is the scientific justification for retaining only 15 conifer stems greater that 16" dbh in regards to providing for LWD recruitment.

R1-52 Page 6-8, Sec. 6.2.1.2.5. Likely to Recruit Factors
It is not clear how many of the six factors listed need to be present to meet the "likely to recruit" categories. Suggest adding language that indicates that if any one of these factors are met that the tree will be designated as likely to recruit.

R1-53 #3. What is the minimum percent lean to meet this criteria?

R1-54 #4. What percentage of the tree must be able to reach the stream to qualify as likely to recruit?

R1-55 #5. Define "sufficiently steep".

R1-56 Page 6-8, Sec. 6.2.1.2.6. Unlikely to Recruit Factors
#1 Define "impeded fall path". What type of structure or potential would constitute an impeded fall path? It is believed that this would be difficult to enforce.

R1-57 Page 6-9, Sec. 6.2.1.2.8. Equipment Exclusion Measures
NCRD believes that unless it can be demonstrated that the construction or reconstruction of landings, spur roads, or roads (except at crossings) in RMZs will have a demonstrated net beneficial effect to aquatic resources that it not be allowed.

R1-58 Page 6-9, Sec. 6.2.1.2.9. Management-related Ground Disturbance Treatment.
#1. NCRD recommends in areas adjacent to State Parks that all mulch and seed be native and/or weed free to inhibit the spread of exotic plants and pests (also see 6.2.1.4.6).

R1-59 #3. Rehabilitation of hand-constructed firelines by pulling duff and litter back onto the fireline should be considered as it provides better prevention of sediment runoff then "drainage structures" alone (water bars).

R1-60 Page 6-9, Sec 6.2.1.2.13. Outer Zone Salvage
Guidelines for salvage of downed trees are not protective enough of Class I streams because only one criterion must be met. For example, wood that is contributing to bank stability could be salvaged, simply if it is not oriented to intercept sediment. A second concern regards who determines whether the wood meets the criteria listed?

R1-61 Page 6-10, Sec. 6.2.1.3.1. Inner Zone RMZ Width
Perennial vegetation can include species classified as "Obligate Wet" or "Facultative Wet" that may occur within the wetted channel of a watercourse. NCRD recommends that the language be changed "perennial upland vegetation".

issuance be met. Issuance criteria have been discussed in EIS Section 1.3 and Master Response 11. The Services believe the Plan meets these criteria.

Response to Comment R1-59

AHCP/CCAA Section 6.2.1.2.9 #3 states: "..., but other measures will be applied as necessary to ensure that hand-constructed firelines within a Class I RMZ do not deliver sediment to Class I watercourses." The "other measures" could include placing duff and litter over bare mineral soil created by fireline construction.

Response to Comment R1-60

Comment noted. AHCP/CCAA Section 6.2.1.2.13 has been revised as follows:

"Within the outer zone of the Class I RMZ, Green Diamond will conduct salvage operations only of downed trees and if <u>all</u> ~~one or more~~ of the following criteria are met:"

AHCP/CCAA Section 6.3.1.1.1 #12 has been revised as follows:

"Salvage will be limited to downed trees in the outer zone and will occur only if <u>all</u> ~~any~~ of the following criteria are met:"

Response to Comment R1-61

As applied in the field, foresters use woody plants, including shrub and tree species, as a working definition of perennial vegetation. Perennial plants are used in the Plan as an indication of the watercourse transition line so foresters look for permanently established plants outside of the watercourse influence zone. The transition is from the area directly associated with the watercourse and the upland area as evidenced by the presence of permanently established vegetation.

The Services believe that the term "perennial vegetation" is clear as used in the AHCP/CCAA.

Response to Comment R1-62

See Master Response 7. Additionally under Green Diamond's NSO HCP that was approved in 1992 (see AHCP/CCAA Section 1.4.3), 70 percent total canopy retention has been required on all Class II watercourses. This is a lesser standard than the proposed measures in the current Plan (85 percent and 70 percent overstory canopy retention in the inner and outer zones, respectively). The level of harvesting in the riparian areas is the functional equivalent to a light commercial thinning and the crowns of trees respond quickly in returning to pre-harvest canopy levels. As described in the Plan, most Class II watercourses have an abundance of functional LWD, and the harvesting that has been done over the last 10 years indicates that there remains a high potential for future recruitment of LWD.

Response to Comment R1-63

There are a variety of functions performed by riparian zones and that a mix of conifer and deciduous trees provides for a fully functioning riparian system. It is acknowledged that conifers are particularly important to provide large and long-lasting LWD. This function of the riparian zone is addressed by the "likely to recruit" language (see AHCP/CCAA Section 6.2.1.2.5). In addition, AHCP/CCAA Sections 6.2.1.2.3 and 6.3.1.1.1 identify the minimum conifer retention standards, which preclude harvesting conifers when the stand is predominately made up of deciduous trees. See Master Response 5 regarding "likelihood to recruit."

Response to Comment R1-64

R1-61 Other alternative language could be from the watercourse transition line, bank full bank or from the outer Channel Migration Zone.

R1-62 Page 6-10 to 6-11, Sec. 6.2.1.4. Conservation Measures within Class II RMZs
NCRD is concerned that there are no retention standards for conifers in Class II RMZs. Please justify how practices below that of the Forest Practice Rules will demonstrate a net beneficial effect to aquatic resources. Such practices could result in significant reductions in functional LWD recruitment as well as habitat conversions. Recommend the following changes to Section 6.2.1.4.1.

R1-63 #1. Simpson will retain at least 85% **conifer** overstory canopy closure within the inner zone **where it exists at the time of harvest. Where it does not exist, the harvest of conifers within the inner zone shall not occur.**

R1-64 #2. At least 70% **conifer** overstory canopy closure will be retained in the outer zone **where it exists at the time of harvest. Where it does not exist, the harvest of conifers within the outer zone shall not occur.**

R1-65 Page 6-10, Sec. 6.2.1.4.2. Retention Based on Bank Stability
It is recommended that "trees contribute to bank stability" be defined. This should include trees with roots or root masses in the channel, bank or whose crown extends into the channel.

R1-66 Page 6-10, Sec. 6.2.1.4.3. Retention Based on Likelihood to Recruit
NCRD believes that this retention strategy should be extended throughout all Class II RMZs. LWD serves many of the same functions in Class II watercourses as it does in Class I watercourses, including sediment retention and metering, and important habitat for species such as the southern torrent salamander.

R1-67 Page 6-11, Sec. 6.2.1.4.5. Equipment Exclusion Measures
Please refer to comments submitted under Sec. 6.2.1.2.8

R1-68 Page 6-11, Sec. 6.2.1.4.6. Management-related Ground Disturbance Treatment
See comments for Sec. 6.2.1.2.9

R1-69 Page 6-11, Sec. 6.2.1.4.9. Outer Zone Salvage
Please refer to comments submitted for Sec. 6.2.1.2.13.

R1-70 Page 6-12, Sec. 6.2.1.6.1. Equipment Exclusion Zone
The FPRs currently require an EEZ of 50-feet for Class III watercourses with slopes in excess of 30%. Please provide justification as to how a significantly lesser level of protection will provide a net beneficial effect to aquatic resources.

R1-71 Page 6-12, Sec. 6.2.1.7.4. Conifer Retention
#1. NCRD recommends that the language be changed to indicate that **all** conifers that contribute to bank stability shall be retained and that this should

See the response to Comment R1-63.

Response to Comment R1-65

Comment noted. Accordingly, AHCP/CCAA Section 6.2.1.4.2 has been revised as follows:

"In stream reaches that currently show evidence of bank instability (i.e. bank erosion, sloughing or channel downcutting), Green Diamond will harvest no trees within the RMZ that contribute to maintaining bank stability. The primary criterion for making this decision will be based on whether or not removal of a tree will contribute to additional erosion where it currently exists or likely promote erosion where it currently does not exist. ~~Within the RMZ, Green Diamond will harvest no trees that contribute to maintaining bank stability.~~ Redwoods will be preferentially harvested over other conifers."

AHCP/CCAA Section 6.3.1.2.1 #4 also has been revised:

"In addition to the canopy requirements, in stream reaches that currently show evidence of bank instability (i.e., bank erosion, sloughing or channel downcutting), Green Diamond will harvest no trees within the RMZ that contribute to maintaining bank stability. The primary criterion for making this decision will be based on whether or not removal of a tree will contribute to additional erosion where it currently exists or likely promote erosion where it currently does not exist. The distinction in retention levels between inner and outer zones of the RMZ will be reduced on increasingly steeper slopes (generally >50%), because of increased needs to retain trees to maintain bank stability. Redwoods will be preferentially harvested over other conifers because of their ability to sprout from the remaining root system."

Response to Comment R1-66

The selection of specific prescriptions, including whether to include additional protective measures for Class II watercourses, is a matter of the Permit applicant's discretion (HCP Handbook at 3-19). The Services' role during the development of a conservation program is to "be prepared to advise," and to judge its consistency with the ESA approval criteria as a whole once the application is complete (HCP Handbook at 3-6 and 3-7). The ESA does not require that any particular measure be adopted or imposed, but only that its criteria for Permit issuance be met. Issuance criteria have been discussed in EIS section 1.3, AHCP/CCAA Section 1.4.1 and Master Response 8. The Services believe, based on the analysis provided in the Plan and EIS, that implementation of the Operating Conservation Program meets ESA requirements.

Response to Comment R1-67

See the response to Comment R1-57.

Response to Comment R1-68

See response to Comment R1-58.

Response to Comment R1-69

Comment noted. AHCP/CCAA Section 6.2.1.4.9 has been revised as follows:

"Green Diamond will carry out salvage operations within the outer zone only of downed trees and if all ~~one or more~~ of the criteria listed in 6.2.1.2.13 are met."

AHCP/CCAA Section 6.3.1.2.1 #10 has been revised as follows:

"Salvage of downed trees in the outer zone (30 to either 70 or 100 feet) will only occur if all of the following criteria are met:"

Response to Comment R1-70

The Services agree with the commenter that the CFPR requirement for a 50-foot EEZ for all Class III watercourses may provide more protection than the Class III measures in the Plan. However, the Plan supplements the requirements of other applicable legal requirements (see AHCP/CCAA Section 1.4), including the CFPRs. Plan approval and issuance of the Permits would not excuse Green Diamond from complying with applicable requirements of the CFPRs. See the discussion of the CFPRs in Master Response 7. The ESA requires the

Services to determine that an ITP applicant "will, to the maximum extent practicable, minimize and mitigate the impacts" of incidental takings (50 CFR Sections 17.32(b)(2)(B), 222.307(c)(2)(ii)). The Services emphasize that this requirement applies to the Operating Conservation Program as a whole, not to individual prescriptions on a measure-by-measure basis; no measure-by-measure comparison is necessary.

Response to Comment R1-71

Comment noted. Accordingly, AHCP/CCAA Section 6.2.1.7.4 #1 has been revised as follows:

"In stream reaches that currently show evidence of bank instability (i.e. bank erosion, sloughing or channel downcutting) , Green Diamond will retain trees that contribute to maintaining bank stability. The primary criterion for making this decision will be based on whether or not removal of a tree will contribute to additional erosion where it currently exists or likely promote erosion where it currently does not exist. In addition, Green Diamond will retain conifers if they are acting as a control point (retaining sediment and/or preventing headcutting) in the channel."

AHCP/CCAA Section 6.3.1.3.2 #4 also has been revised:

"In stream reaches that currently show evidence of bank instability (i.e. bank erosion, sloughing or channel downcutting) , conifers will be retained where they contribute to maintaining bank stability. The primary criterion for making this decision will be based on whether or not removal of a tree will contribute to additional erosion where it currently exists or likely promote erosion where it currently does not exist. In addition, conifers will be retained if they are acting as a control point (retaining sediment and/or preventing headcutting) in the channel. A minimum average of one conifer per 50 feet of stream length within the 50-foot EEZ will be retained."

Response to Comment R1-72

AHCP/CCAA Section 6.2.1.7.4 #2 has been revised as follows:

"A minimum average of one conifer 15 inches dbh or greater per 50 feet of stream length with the EEZ will be retained."

AHCP/CCAA Section 6.3.1.3.2 #4 has been revised as follows:

"Conifers will be retained where they contribute to maintaining bank stability or if they are acting as a control point in the channel. A minimum average of one conifer 15 inches dbh or greater per 50 feet of stream length within the 50-foot EEZ will be retained."

Response to Comment R1-73

AHCP/CCAA Section 6.2.1.8.1, as described further in AHCP/CCAA Section 6.3.1.4.1, provided the process for mapping floodplains. Twice the maximum bankfull depth will be used as an initial screening tool in the field. The actual recurrence interval for the floodplain that this method establishes would vary from site to site; however, within the Plan Area, this method is expected to reflect the floodplain with a 20-year recurrence interval, on average.

Response to Comment R1-74

See the response to Comment J1-82.

R1-71 include trees with roots or root masses in the channel, bank or whose crown extends into the channel.

R1-72 #2. As currently stated the "one conifer" retained could be a 3-inch sapling. NCRD recommends that the language be changed to retain one 15" dbh or greater conifer per 50 feet in addition to those which meet the criteria stated in 6.2.1.7.4 #1.

R1-73 Page 6-13, Sec. 6.2.1.8.1. Floodplains
The recurrence interval for assessment of floods and their deposits is not defined. How will floodways be addressed? Recommend that the placement of structures in floodways be consistent with FEMA requirements for disaster assistance.

R1-74 Page 6-13, Sec. 6.2.1.8.2. CMZ's
How will deviation of the stream from a mapped CMZ be addressed? Recommend that a report and analysis of such migration be prepared by a qualified hydrologist and reviewed by a qualified expert.

R1-75 Page 6-14, Sec. 6.2.2.1.2. Initial Maximum Slope Distance.
#2. Recommend that the "qualifying slope break" be based on runout criteria relating the likely initial failure mechanism and volume, secondary entrainment volumes, slope, travel distance and angle, and buffering quality between the source and receiving areas. Recommend that the potential for secondary instability caused by loading of the qualifying slope break by debris be considered in identifying the appropriate slope break locations. Roads, landings and other similar features should not qualify as a break in slope.

R1-76 Page 6-15, Sec. 6.2.2.1.4. RSMZ Inner and Outer Zone Distances
#2. Provide a biological justification for a distance of 70 feet.
#3. Provide a biological justification for a distance of 30 feet.

R1-77 Page 6-15, Sec. 6.2.2.1.6. Prescriptions for RSMZs in All HPAs except Coastal Klamath and Blue Creek.
#2. NCRD recommends changing the language to specify that 85% and 75% **conifer** overstory shall be retained in the inner zone and outer zone respectively of the RSMZ where it currently exists.

R1-78 Page 6-15, Sec. 6.2.2.1.7. Default Prescriptions for SMZ's.
#1. Recommend striking the word initial, as there will only be one entry over the life of the plan (see number three).

R1-79 # 2. Section states that all hardwoods will be retained. In other sections Schmidt et al.'s on root tensile strength is cited, which reportedly shows comparatively greater cohesion for coniferous species. Where feasible recommend thinning of continuous hardwood groves and replacement with evenly spaced conifers

Response to Comment R1-75

As described in AHCP/CCAA Section 6.3.2.3.1, any slope break that would likely impede sediment delivery to watercourses from shallow landslides occurring above the slope break will qualify to terminate a SSS MWPZ (see AHCP/CCAA Sections 6.2.2.1.3 and 6.2.2.1.4). Such slope breaks will be identified in the field on a site-specific basis through the THP process.

Response to Comment R1-76

The Services are not aware of any direct biological justification for this measure although the measures in the Operating Conservation Program (AHCP/CCAA Section 6.2) were developed based on biological goals and objectives for the covered species and their habitats (AHCP/CCAA Section 6.1) and the site-specific conditions within the Plan Area.

Response to Comment R1-77

The Services have considered, but rejected, the recommended revision to AHCP/CCAA Section 6.2.2.1.6. The function of the Riparian Slope Stability Management Zone (RSMZ) is to provide for slope stability for inner gorges and Steep Streamside Slopes (SSS's), and to insure that large woody debris (LWD) is contributed to the channel if a shallow rapid landslide should occur. Both conifers and deciduous trees contribute root strength to help stabilize slopes, and Green Diamond has found that Class II watercourses do not need large conifers to support a healthy level of functional LWD. The Services believe that, overall, implementation of the Operating Conservation Program meets the requirements for issuance of the ESA section 10 permits (see Master Response 8) and, therefore, that no change is required in the Plan's proposed RSMZ measures that are the subject of this comment.

Response to Comment R1-78

AHCP/CCAA Section 6.2.2.1.7 provides that the initial silvicultural prescription in SMZs will be single tree selection but also provides that, with only one exception, there would only be one harvesting entry of SMZs during the term of the Plan and Permits. For clarity, the following language has been added to AHCP/CCAA Section 6.2.2.1.7 No.3:

"If cable corridors through SMZs are necessary to conduct intermediate treatments (e.g. commercial thinning) in adjacent stands prior to even-aged harvest, Green Diamond will apply the restrictions in this section except harvesting of trees in the SMZs will be limited to cable corridors only. Any cable roads established in the SMZ as part of the intermediate treatment will, to the extent feasible, be reused during the even-aged entry in the adjacent stand. The SMZs will be subject to the restrictions identified in Section 6.2.2.1." ~~There will be only one harvesting entry in the SMZ during the term of the Permits."~~

Similarly, AHCP/CCAA Section 6.3.2.3.4 has been modified as follows:

"If cable corridors through SMZs are necessary to conduct intermediate treatments (e.g. commercial thinning) in adjacent stands prior to even-aged harvest, Green Diamond will apply the restrictions in this section except harvesting of trees in the SMZs will be limited to cable corridors only. Any cable roads established in the SMZ as part of the intermediate treatment will, to the extent feasible, be reused during the even-aged entry in the adjacent stand. The SMZs will be subject to the restrictions identified in this section. ~~*Only one harvesting entry will be allowed in SSS zones during the term of the Permit."*~~

In this section, "initial" indicates that the prescription is an initial default that could be changed as a result of the steep streamside slope assessments discussed in AHCP/CCAA Sections 6.3.2.3.1, 6.3.5.4.3, 6.2.6.1.3 and 6.2.6.2.

Response to Comment R1-79

In SMZs, the hardwoods that would be retained would be in addition to the conifers to be retained. The default silvicultural prescription for the SMZ is single tree selection and that method may be applied where pre-harvest stocking levels would support a partial harvest where the final

stocking standard of the single tree selection method could be met post harvest. AHCP/CCAA Section 6.2.2.1.7. The timber ‘crop’ is the residual timber stand left after harvesting under the single tree selection silvicultural method. Retaining any existing hardwoods is intended to add to slope stability over that which could be expected from the minimum number of trees to be left under the single tree selection silvicultural method. This default prescription for the SMZ, including the practice of leaving hardwoods, is similar to recommendations that have been made by reviewing agencies during pre-harvest inspections for THPs where land stability concerns are raised. For these reasons, the Services believe the hardwood retention provision of the default prescriptions for SMZs is appropriate for the purposes of the Plan.

where such species would enhance slope stability over continuous hardwood groves, where coniferous species are consistent with historical site conditions and where the hardwood harvesting does not present a stability or temperature problem.

R1-79

R1-80 Page 6-15, Sec. 6.2.2.1.8. Tree Falling for Safety and Cable Yarding
NCRD recommends that all trees felled within the RSMZs inner zone be retained for LWD recruitment and/or for course woody debris.

R1-81 Page 6-15, Sec. 6.2.2.1.9 Road Construction
Recommend the use of a California registered geologist (use throughout) or a geologist licensed by the state entity that may cover the plan geographic area, in the event of state partitioning.

R1-82 Page 6-16, Sec. 6.2.2.2.1. Identification
Describe the quality of the 10-meter DEM used in the SHALSTAB analysis. There is insufficient information to determine if the topographic base used was sufficiently accurate to maximize the utility of SHALSTAB.

R1-83 Page 6.2.2.2.3. Silvicultural Prescription
#3. Define "where feasible" and provide examples of where the retention of all species and size classes would not be feasible. NCRD recommends that the words "where feasible" be removed from the text as it is unclear and unenforceable.

R1-84 Page 6-17, Sec. 6.2.2.3.3 Harvesting Near Active Deep-seated Landslides Identified by the First Criterion
If the imaginary line from the base of the scarp to a 25-foot setback location exceeds the angle of repose for the unfailed slope there is a higher probability of failure of that slope, even if the harvested site is flat. Scarp height for deep-seated landslides is described as up to 100 feet elsewhere in the plan. Failure would reduce soil productivity and depending on site characteristics, could lead to sediment delivery. Recommend that the setback be 25 feet or the projected daylight point for the angle of repose from the bottom of the scarp proposed for that HPA, whichever is greater.

R1-85 Page 6-17, Sec. 6.2.2.3.4. Harvesting Near Active Deep-seated Landslides Identified by the Second Criterion
If the toe of the active landslide is eroded or buried such that the inflection point is obscured how would the setback be determined? Recommend that the inflection point be surveyed or GPS'd immediately after failure to record its location for longer-term management and that if it cannot be relocated because of burial or erosion that harvesting in the site vicinity be re-assessed by a California registered geologist.

R1-86 Page 6-17, Sec. 6.2.2.3.6. New Road Construction

Response to Comment R1-80

The approach to LWD retention in the Operating Conservation Program is to retain existing down woody materials in the Inner Zone and retain LWD in the Outer Zone if it is likely to be incorporated into the bankfull channel (including wood located below unstable areas) or the wood is contributing to bank or slope stability. See AHCP/CCAA Sections 6.2.1.2.11, 6.2.1.2.13, 6.2.1.4.8, and 6.2.1.4.9. Future recruitment of LWD will result directly from the natural tree mortality (stem exclusion, disease, animal damage and etc.) within developing stands as well as the retention of existing snags and green wildlife trees. Therefore, the Services do not believe that it is necessary to retain trees felled for safety and cable yarding for LWD recruitment.

Response to Comment R1-81

The role of a geologist is discussed in Master Response 13.

Response to Comment R1-82

AHCP/CCAA Section 6.3.2.4.1 suggests that a 10-meter resolution digital elevation model (DEM) would be used. However, as a result of public comments received (see, e.g., Comment J1-62), the language was changed to state that a 10-meter DEM or better will be used for SHALSTAB.

Green Diamond's DEMs were developed by the USGS in accordance with National Map Accuracy Standards (NMAS). The NMAS are defined for DEMs in terms of a measure of statistical precision called the "Root Mean Square Error," or RMSE. The

USGS National Mapping Program Technical Instructions; Standards for Digital Elevation Models (available from the following USGS website: <http://rockyweb>.cr.usgs.gov/nmpstds/demstds.html>) defines a system for classifying DEMs into accuracy levels based on RMSE. The USGS DEMs that cover Green Diamond's properties are primarily Level 2 under this standard, although approximately one-third of the ownership is covered by Level 1 DEMs. The description of a Level 1 DEM classification in Part 2, paragraph 2.3.1 of the USGS standards states: "A vertical RMSE of 7 meters… is the desired accuracy standard. A RMSE of 15 meters is the maximum permitted." The document describes Level 2 accuracy (paragraph 2.3.2) as "…data derived from hyposographic and hydrographic data digitizing… [where an] RMSE of one-half contour interval is the maximum permitted." This is referring to digitizing from USGS 7.5' contour maps, for which the NMAS require that 90 percent of elevations determined from solid line contours must be within one-half contour interval of true elevation. As a result, USGS 7.5' quadrangles are produced with a variety of contour intervals, depending on the reliability of the data used in producing the original map. All USGS 7.5' quadrangles covering the Plan Area display contour intervals of either 20' or 40', depending on the contour interval of the underlying quadrangle map from which the DEM was produced by digitizing. In summary, Green Diamond's 10-meter DEMs provide the same degree of accuracy as would be obtained by determining elevations from 7.5' quadrangle maps. Further, the Services believe there is sufficient information available to make relevant determinations.

Response to Comment R1-83

The term "feasible" is not defined in the ESA or NEPA; however, in the Plan and EIS, as used in other regulatory regimes such as the CFPRs, the term means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, operational and technological factors, and considering what is allowable under the law (AHCP/CCAA Section 10.2). Regarding enforceability, see Master Response 14.

Response to Comment R1-84

Scarp heights of 100 feet are not described anywhere in the Plan. While the Plan does describe landslides that may be up to 100 feet deep (see Appendix F), this is a general reference to only the largest landslides, which are typically regarded as dormant or relict. These references do not refer to the existence of active scarps that are 100 feet high. The angle of repose is an inappropriate gauge of critical slope gradients for slope stability evaluations due to the variety of loose, cohesionless slope materials. Accordingly the recommendation has been considered, but rejected.

Response to Comment R1-85

Active deep-seated landslide toes that trigger conservation measures will be mapped on THP maps at a scale of 1:12,000 scale or larger. This information will be stored digitally. This method of mapping and data storage is expected to provide an adequately reliable means of cataloging the information both in terms of accuracy of location and reliability of long-term record. Therefore, the recommendation has been considered, but rejected.

Response to Comment R1-86

AHCP/CCAA Section 6.2.2.3.6 provides that "Green Diamond will not construct new roads across active deep-seated landslide toes or scarps, or on steep (greater than 50 percent gradient) areas of dormant slides, without approval by a Registered Geologist and a Registered Professional Forester with experience in road construction in steep forested terrain." The commenter suggests that this be revised to clarify that a California-licensed geologist would be used when road construction proposes to cross any portion of an active deep-seated landslide. The Services agree with the commenter and for clarity where the Plan specifies that an RG will have to approve, this is equivalent to a California-licensed geologist. The "approval" phrase in this context means that the California-licensed geologist will perform all tasks required for them to attach their RG California seal to the recommended activity documentation.

Response to Comment R1-87

As stated in AHCP/CCAA Section 6.2.2.4, only shallow landslides that have a potential to deliver sediment to a watercourse may qualify for conservation measures. If a shallow landslide has no reasonable potential to deliver sediment to the watercourse network, there is no need for mitigations to protect the covered species. Where multiple shallow landslides are present on a given slope, then each may be subject to the conservation measures described in AHCP/CCAA Sections 6.2.2.4 and 6.3.2.6, in addition to any other conservation measures that might apply for slope stability (AHCP/CCAA Section 6.2.2.1), harvest-related site disturbance (AHCP/CCAA Section 6.2.4), riparian management (AHCP/CCAA Section 6.2.1), or for yarding methods (AHCP/CCAA Section 6.2.4.4). Any covered activities that require the expertise of an RG would need to be carried out by, or occur under the supervision of, an RG as required by California law. See Business and Professions Code section 7800 *et seq*.

Response to Comment R1-88

The role of a geologist is discussed in Master Response 13.

Response to Comment R1-89

AHCP/CCAA Section 6.2.2.5 has been revised as follows:

"The training will be administered by a qualified California RG or a Certified Engineering Geologist (CEG) ~~and will initially follow the guidelines of the 1998 and 1999 CLFA Geology and Mass Wasting workshops~~."

R1-86 Recommend that Simpson receive approval from a California registered geologist for new road construction for any part of an active deep-seated landslide. Zones of accumulation may not have well defined toes or scarps but roading could affect the hydrology of potentially unstable materials.

R1-87 Page 6-18, Sec. 6.2.2.4. Shallow Rapid Landslides.
#1. This prescription provides lateral setbacks from existing landslides but where there are multiple landslides on a slope it does not address the vulnerability of the intervening area, which could be at high risk for failure because of the lack of lateral support caused by evacuation of the neighboring landslides. This intervening area at risk could exceed the setback proposed here. Furthermore it does not address the mechanisms that engendered the initial failure on the subject slope, which could persist at the unfailed slope. Recommend that a California RG evaluate all slopes bearing active shallow landsliding that are proposed for harvesting.

R1-88 #2. Recommend that a CA RG and RPF evaluate new road construction within the proposed canopy setbacks for shallow landslides outlined in 6.2.2.4, number 1.

R1-89 Page 6-18, Sec. 6.2.2.5. Training.
#2. Recommend that training be administered by a California RG or CEG with experience in road construction in steep forested terrain.

R1-90 Page 6-19, Sec. 6.2.3.1.4. Documentation of Fish-passage Problems
What protocol will be used to determine fish passage adequacy? Will amphibian passage be addressed? How do these sites fit into the prioritization matrix? Recommend that protocols be identified and weighted according to habitat parameters outlined in the plan.

R1-91 Page 6-22, Sec. 6.2.3.2. Implementation Plan.
#3. Who will choose order of "high" sites and will the number of treatment sites in any watershed or stream per year account for short-term effects? Recommend that the order of treatment sites be approved by the agencies having oversight for this plan on a yearly basis and that a matrix be developed to qualify the number of treatment sites per unit area per year based on site characteristics.

R1-92 Page 6-22, Sec. 6.2.3.2.1. Acceleration of Implementation Plan.
#1. Inflation adjustment to be based on what index? How will treatment production be controlled to ensure that funds are effectively spent? Recommend that the index be adjusted according to the Consumers Price Index and that production reports of treatment be provided to the oversight agencies on an annual basis. If the agencies determine a deterioration in production over any three-year period they may increase the required commitment to achieve a treatment trajectory at least consistent with average industry production rates in

Response to Comment R1-90

Culverts that are identified on fish bearing watercourses during a road assessment will be documented (AHCP/CCAA Section 6.2.3.1.4) and recommended for high priority replacement with a "fish friendly" crossing. In most cases, if a culvert is identified on a fish bearing stream, it will be replaced with a bridge if feasible. AHCP/CCAA Section 6.2.3.6.4. Green Diamond's criteria for providing fish passage includes fish in all life stages. As such, there will be few cases where a standard culvert (even with near 0 percent gradient) may not allow passage of juvenile fish. Therefore, in most instances the crossing will require a bridge installation or some other form of crossing that utilizes a stream bed simulation technique to facilitate passage of juvenile fish.

The Plan does not specifically address amphibian passage. It is not known if culverts have the potential to adversely affect the amphibian species. It is likely that culverts can act as barriers to the larval forms but not to adult amphibians. Whether this has an impact on the populations is not known since the headwater amphibians are thought to have limited vagility (see related discussion in AHCP/CCAA Sections 3.2.2 and 6.3.5.2.5).

Response to Comment R1-91

The treatment of sites as "high" priority, and their order of implementation, will be determined by Green Diamond pursuant to the methodology set forth in the AHCP/CCAA. The number of treatment sites in any watershed or stream per year will not take into account short-term effects. The Services do not see a need, and the comment does not provide a basis to require, annual approval by the Services of the order of treatment sites or the development and maintenance of a matrix.

Response to Comment R1-92

AHCP/CCAA Section 6.2.3.2 states: "Green Diamond will provide for an average of $2.5 million per year (to be inflation adjusted in 2002 dollars for each year of the acceleration period) for the first 15 years of the Permits' 50-year term (the 'acceleration period') to implement the treatment of high and moderate priority sediment sites identified in the implementation plan, for a total of $37.5 million (unless the acceleration period is adjusted as provided in 6.2.3.2.3)."

Inflation will be adjusted based on the Consumer Price Index, or some other standard method upon which the Services and Green Diamond agree. Green Diamond would provide the Services with biennial reports on, among other things, its activities, including road management activities, pursuant to the Operating Conservation Program. IA paragraph 8.1. Green Diamond's commitment to provide $37.5 million (unless the acceleration period is adjusted) is a fiscal commitment to stabilize road related sediment within the first 15 years of the Permits. The data and analysis provided in AHCP/CCAA Appendix F3 estimate that, based on the current estimate of 6,346,000 cubic yards of sediment requiring treatment, $2.5 million fiscal commitment per year for 15 years would result in the stabilization of approximately 48 percent of the overall volume being treated in first 15 years of the AHCP/CCAA (see Figure 4.2-1). This 48 percent equates to 3,058,000 cubic yards of sediment being treated within the first 15 years of the AHCP/CCAA. (See Appendix F of the AHCP/CCAA). In contrast, if the road-related treatment was performed without the acceleration at approximately $1 million per year (Green Diamond's current road work expenditure), fewer than 1,223,000 cubic yards would be removed during the first 15 years, as based on Green Diamonds's anticipated timber harvest levels over the next 15 years. See also responses to Comments G10-52 and J1-66 regarding Green Diamond's financial commitment under the Plan to the road implementation plan.

Response to Comment R1-93

As indicated in AHCP/CCAA Section 6.2.3.2, the $37.5 million will be provided to treat high and moderate priority sediment sites during the first 15 years of the Plan. It is unlikely that new roads would qualify as high or moderate priority sediment sites during this timeframe as they will be subject to the new road construction and maintenance standards set forth in AHCP/CCAA Section 6.2.3.5. The Services do not see a basis to exclude roads appurtenant to THPs from the program if they merit accelerated treatment pursuant to the methodology set forth in AHCP/CCAA Sections 6.2.3.2.1 and 6.3.3.2.5. Green Diamond has estimated that on an annual basis it will spend $1 million of the $2.5 million on high- to moderate-risk sites on roads associated with THPs.

Response to Comment R1-94

If Green Diamond sells property from the Plan Area (see IA paragraph 11.3), the Permits, the Plan and the IA would cease to be effective as to Green Diamond for lands removed from the Plan Area upon the sale (IA paragraph 11.5). Because the Plan does not assign any "liability" for road ownership, no liability would pass to the purchaser pursuant to a sale. However, the IA (in paragraph 11.3) limits the total acreage that may be sold or transferred out of the Plan Area to 15 percent of the total acreage of the Initial Plan Area without an Plan amendment.

Response to Comment R1-95

As discussed in response to Comment R1-94, the Permits, Plan, and IA would cease to be effective as to Green Diamond for lands removed from the Plan Area in accordance with IA paragraph 11

R1-92 the region during the same interval. NCRD also believes that the amount of funding will be insufficient to meet the desired objective.

R1-93 #2. It is unclear whether the $2.5 million dollar commitment pertains only to improvement of roads that exist at the time of the agreement. Recommend that new roads be treated and maintained outside this commitment. NCRD also recommends that the treatment of roads within and appurtenant to THPs pursuant to the FPRs not apply towards the 2.5 million per year.

R1-94 #4. If Simpson sells property with a high or moderate rating for treatment will that liability pass onto the new owner or will the cost of that treatment come from the $2.5 million commitment? Recommend that treatment liabilities be addressed before such sales.

R1-95 Page 6-23, Sec. 6.2.3.2.3. Revisions to Acceleration Period Based on Five-year Assessment
How do these revisions relate to potential sales, exchanges and purchases? Recommend that any changes in the rate of commitment do not decrease based on a decrease in the sediment delivery potential of the ownership resulting from changes in the land base of the property.

R1-96 Page 6-24, Sec. 6.2.3.3.2. Watercourse Crossings
#4. Please refer to previous NCRD comments on the use of native seeds and weed free mulches within STA's.

R1-97 Page 6-24, Sec. 6.2.3.3.4. Road Surface Runoff
#'s 1 & 2. Drainage features should be hydrological disconnected from watercourses to assure that they do not discharge sediment into the watercourses. All discharge points should also be evaluated to assure that they do not concentrate water on unstable features.

R1-98 Page 6-24, Sec. 6.2.3.3.5. Erosion Control
NCRD believes that this language is not enforceable. Also, please refer to previous NCRD comments on the use of native seeds and weed free mulches within STA's.

R1-99 Page 6-25, Sec. 6.2.3.4.5. Design Flow.
#1. Recommend that culvert sizing account for a bulking factor to allow passage of organic debris and sediment.

R1-100 Page 6-26, Sec. 6.2.3.4.6. Fish-bearing Watercourses
#2. The language should be modified to acknowledge that culverts will provide year-round unimpeded passage for all life stages of fish.

R1-101 Page 6-26, Sec. 6.2.3.4.7. Washed Out or Replacement Culverts.

upon Green Diamond's sale, transfer or other deletion from the Plan Area (IA paragraph 11.5). Therefore, any revisions to the acceleration period based on a five-year assessment (AHCP/CCAA Section 6.2.3.2.3) would not relate to lands sold, transferred or otherwise removed from the Plan Area in accordance with IA paragraph 11.

Response to Comment R1-96

See the response to Comment R1-58.

Response to Comment R1-97

The nature of decommissioning roads generally, and specifically in this Plan, is to create a maintenance-free road surface that is hydrologically disconnected from watercourses. To clarify this intent, the language in AHCP/CCAA Section 6.2.3.3.4 #1 has been revised by Green Diamond as follows:

"Green Diamond will establish maintenance-free surface drainage for temporarily and permanently decommissioned roads that are hydrologically disconnected from watercourses."

In addition, AHCP/CCAA Section 6.2.3.3.4 #2 has been modified by Green Diamond as follows:

"Inside ditches and springs and seeps will be properly drained with deep cross-drain ditches. Discharge from the ditches will not be directed onto unstable areas."

Similarly, AHCP/CCAA Section 6.3.3.5.5 has been revised by Green Diamond as follows:

"Both temporarily and permanently decommissioned roads will have maintenance free surface drainage that are hydrologically disconnected from watercourses. Inside ditches and springs and seeps will be properly drained with deep cross-drained ditches. Discharge from the ditches will not be directed onto unstable areas. Localized outsloping may be necessary to adequately drain the road surface. Permanently decommissioned roads will be ripped and planted with commercial tree species where appropriate to reestablish timber production."

Response to Comment R1-98

The AHCP/CCAA Section 6.2.3.3.5 addresses situations where additional surface erosion control on decommissioned roads may be necessary. When additional surface erosion control is determined necessary by qualified and trained personnel, specific treatments will be applied to supplement the installation of the standard road drainage measures listed in AHCP/CCAA Section 6.2.3.3.4. Regarding Plan enforceability, see Master Response 14. Regarding seeding and mulching, see the response to Comment R1-96.

Response to Comment R1-99

The process that Green Diamond uses to size culverts includes a factor of safety that would address this concern. Once the 100-year design flow is calculated, the culvert diameter is selected on the basis that the culvert should pass the design flow without submerging the inlet. In other words, a headwater depth to culvert diameter ratio (HW/D) of 1.0 is used when sizing the culvert. A headwater depth to culvert diameter ratio greater than 1.0 would allow a smaller culvert diameter to be used yet still accommodate the 100-year flow; however, the water is designed to rise above the top of the culvert. For example, a 100-year design flow of 40 cfs would require a 42-inch diameter culvert to pass the flow without submerging the inlet (HW/D =1.0), but only a 30-inch diameter culvert with a HW/D =2.0 (30 inches of fill on top of the 30 inch pipe). Green Diamond uses the HW/D ratio of 1.0 because once the inlet becomes submerged the potential for a culvert to plug with sediment and/or debris dramatically increases. Green Diamond does not integrate the fill material above the culvert into the equation when determining the culvert size to accommodate the design flow, but rather uses the fill material above the culvert as a factor of safety for sediment and/or debris. In the example above, the inlet of the 42-inch culvert could

become approximately 25 percent plugged with sediment and/or debris and still pass the 100-year flow (provided there was at least 30 inches of fill on top of the culvert).

Response to Comment R1-100

Comment noted. However, for the reasons that follow, it has not been incorporated into AHCP/CCAA Section 6.2.3.4.6 and the Services do not believe that implementation of the suggestion is necessary for the Plan to meet the Permit issuance criteria discussed in Master Response 8. It would not be feasible to provide year-round passage for all life stages of fish because there are portions of natural streams that do not provide year-round passage. In addition, not all life stages require movement year round, particularly during a peak flow event. As such, it is Green Diamond's intent to provide adequate fish passage when fish migration is likely to occur. The upstream and downstream passage for fish includes all life stages; however, AHCP/CCAA Section 6.2.3.4.6 # 2 has been clarified by Green Diamond as follows:

"When a bridge installation is not feasible, a countersunk or bottomless culvert will be installed on grade that will provide upstream and downstream passage for all life stages of fish. Installed culverts will not restrict the active channel flow."

Response to Comment R1-101

Comment noted, but not incorporated. Green Diamond's standard practice for the placement of large organic debris or logs removed from crossings is for their placement along the road or crossing banks to provide ground cover. In addition, this material is typically used for instream restoration projects, or may be salvaged if a piece has high merchantable value.

Response to Comment R1-102

Comment noted. However, this is not standard practice and hauling soils to other areas would not be cost effective. Green Diamond will revegetate roads that are planned for permanent decommissioning to reestablish timber production (see AHCP/CCAA Section 6.2.3.3.4). Due to soil and climate conditions, lands within the Plan Area naturally revegetate themselves very quickly without the need for supplementation of organic materials.

Response to Comment R1-103

Ditchouts for throughcuts will be treated like any other ditch drain and, consistent with the recommendation, will be designed to avoid discharge onto unstable areas. As stated in AHCP/CCAA Section 6.2.3.6.15, all ditch drain discharges will be hydrologically disconnected from direct discharge to Class I or II watercourses. See also AHCP/CCAA Section 6.2.3.6.13.

Response to Comment R1-104

Comment noted, but not incorporated. Geologic structure and seismicity are not included in the conservation measures for slope cuts for practical reasons. First, consistent and predictable geologic structure in the Plan Area is lacking. This is a function of both the structural complexity and pervasively mixed and convoluted nature of the Franciscan bedrock in the Plan Area and the lushly vegetated soil mantle that masks bedrock exposures. Second, seismicity of such severity that will significantly alter the habitat status or require additional conservation measures is not considered reasonably foreseeable, as discussed in AHCP/CCAA

R1-101 #2. Recommend that buried logs be placed on channel banks downstream from the crossing unless such placement would present a high probability for plugging of downstream drainage structures.

R1-102 Page 6-27, Sec. 6.2.3.5.6. Organic Layer
Recommend stockpiling of organic material for use on decommissioned roads to promote revegetation and timber production.

R1-103 Page 6-29, Sec. 6.2.3.5.14. Use of Throughcuts
Recommend that ditchouts at the beginning and ends of throughcuts only be placed so that they only drain onto stable locations and are not hydrologically connected to watercourses.

R1-104 Page 6-29, Sec. 6.2.3.5.15. Slope Cut Design
Recommend consideration of geologic structure and seismicity in design.

R1-105 Page 6-30, Sec. 6.2.3.6.4. Fish-bearing Watercourses
#2. Refer to comments for Sec. 6.2.3.4.6.

R1-106 Page 6-31, Sec. 6.2.3.6.10. Discharge.
#2. Recommend that downspouts be fully enclosed and capable of passing design flow, organic material and sediment.

R1-107 Page 6-32, Sec. 6.2.3.6.13. Additional Culverts and Rolling Dips
Recommend that ditch water not accumulate onto areas with high instability according to the SHALSTAB analysis.

R1-108 Page 6-32, Sec. 6.2.3.6.14 though 6.2.3.6.16
The document appears to be using the terms "ditch relief culvert" and "ditch drain" interchangeable. If these are separate terms then please provide a definition to clarify the difference. If these terms are being used interchangeably then NCRD recommends using the term "ditch relief culvert" only to reduce potential confusion.

R1-109 Page 6-32, Sec. 6.2.3.7.1. Landings in RMZs or EEZs
NCRD believes that this section should apply to the reconstruction of landings in RMZs and EEZs as well.

R1-110 Page 6-33, Sec. 6.2.3.7.2. Limitation on New Landing Construction
NCRD recommends that the construction and/or reconstruction of landings in STA's adjacent to State Parks not be allowed in that they do not meet the intent of 14 CCR 913.4(a).

R1-111 Page 6-33, Sec. 6.2.3.7.4. Steep Slopes
Recommend that landing construction not occur on slopes greater than 60% in the Humboldt HPA (based on definition of steep slope in the AHCP).

Section 6.3.9.3. Instead, conservation measures to guide the favorable placement of new roads and control sedimentation from road runoff and existing high and medium priority crossings and road fill slopes address potential sediment contribution from roads. The conservation measures for management roads are described in detail in AHCP/CCAA Sections 6.2.3 and 6.3.3.

Response to Comment R1-105

AHCP/CCAA Section 6.2.3.6.4 #2 has been clarified by Green Diamond as follows:

"When a bridge installation is not feasible, a countersunk or bottomless culvert (or other fish-friendly structure) will be installed on grade that will provide upstream and downstream passage for all life stages of fish. Installed culverts will not restrict the active channel flow."

Response to Comment R1-106

Comment noted, but not incorporated. Using an enclosed downspout would essentially ensure the culverts will plug and not function as designed. The majority of downspouts have a different angle (typically much steeper) at the junction of the culvert and the downspout. This sharp angle at the junction is where sediment and woody debris would likely become lodged and ultimately plug the culvert. An open downspout (e.g. half-round culvert) will allow sediment and organic debris to exit the culvert and continue onto the downspout unobstructed. The provision described in AHCP/CCAA Section 6.2.3.6.10 will ensure the downspouts will be functional.

Response to Comment R1-107

The AHCP/CCAA Section 6.2.3.6.13 states that ditch relief culverts and rolling dips will be used to minimize ditch water accumulation on slide prone landforms. This would include areas such as inner gorges, headwall swales and existing landslides.

Response to Comment R1-108

The terms "ditch relief culvert" and "ditch drain" were used interchangeably in the draft Plan. To reduce potential confusion, the term "ditch relief culvert" has been used in the final Plan in place of "ditch drain."

Response to Comment R1-109

The selection of specific prescriptions, including whether to include reconstruction of landings in RMZs and EEZs, is a matter of the Permit applicant's discretion (HCP Handbook at 3-19). The Services' role during the development of a conservation program is to *"be prepared to advise,"* and to judge its consistency with the ESA approval criteria as a whole once the application is complete (HCP Handbook at 3-6 and 3-7). The ESA does not require that any particular measure be adopted or imposed, but only that its criteria for Permit issuance be met. Issuance criteria have been discussed in AHCP/CCAA Section 1.4.1, EIS Section 1.3 and Master Response 8. The Services believe, based on the analysis provided in the Plan and EIS, that implementation of the Operating Conservation Program meets ESA requirements.

Response to Comment R1-110

Obligations imposed in the Plan supplement other applicable legal requirements (see AHCP/CCAA Section 1.4), and do not excuse Green Diamond from compliance with any other applicable Federal or State requirements, including the CFPRs.

Response to Comment R1-111

Comment noted, but not incorporated. The slope gradient criteria the commenter refers to is for SSS. SSS's are a specific type of MWPZ and have detailed conservation measures associated with them (see AHCP/CCAA Section 6.2.2.1). Road construction (and associated landings) will avoid SSS's, where feasible. When they cannot be avoided the road will be evaluated by an RG and an RPF with experience in road construction in steep forested terrain. The slope gradient thresholds do not apply to areas outside the SSS MWPZ. In addition, all landings used as part of current operations will be assessed

after completion of operations to determine whether or not overhanging or perched fill or organic material poses a risk of failure and sediment delivery to a watercourse. If such a risk exists, the sidecast or fill material will be pulled back to a more stable condition.

Response to Comment R1-112

The selection of specific prescriptions, including the use of native seeds and weed-free mulches and the timeframe to implement erosion control measures, is a matter of the Permit applicant's discretion (HCP Handbook at 3-19). The Services' role during the development of a conservation program is to "be prepared to advise," and to judge its consistency, as a whole, with the ESA approval criteria once the application is complete (HCP Handbook at 3-6 and 3-7). The ESA does not require that any particular measure be adopted or imposed, but only that its criteria for Permit issuance be met. Issuance criteria have been discussed in EIS Section 1.3 and Master Response 8. The Services believe the Plan meets these criteria.

Response to Comment R1-113

Secondary management roads are defined in AHCP/CCAA Section 6.3.3.2.1- as roads that "support periodic traffic into portions of tracts with the level of use dependent upon location of harvest units."

Response to Comment R1-114

In the final AHCP/CCAA Section 6.2.3.9.5 #1 the text has been clarified to read as follows:

"Green Diamond will conduct inspections on roads that are accessible by trucks or ATVs. Problems identified during the inspections will be documented, and recommendation for their

R1-112 Page 6-35, Sec. 6.2.3.8.4. Seeding and Mulching
Please refer to previous NCRD comments on the use of native seeds and weed free mulches within STAs adjacent to State Parks. These erosion control methods should also be implemented prior to October 15.

R1-113 Page 6-36, Sec. 6.2.3.9.4. Road Maintenance Schedules for All Secondary Management Roads or Roads Not Yet Decommissioned
Please define "Secondary Management Roads".

R1-114 Page 6-36, Sec. 6.2.3.9.5. Inspection Content
NCRD does not believe that individuals "driving" the roads will able to adequately detect road related problems from a truck. Culvert inlets are often obscured by vegetation and cannot be viewed from a passing vehicle.

R1-115 Page 6-37, Sec. 6.2.3.10.1. Emergency Inspection Trigger
Please provide justification for the three inch of rain in a 24-hour period threshold. Recommend that in the event earthquake generated groundshaking exceeds .4 g (gravity) based on CGS/USGS seismographs, inspections and related treatments shall occur throughout the affected HPA.

R1-116 Page 6-37, Sec. 6.2.3.10.2. Emergency Inspection Repairs.
#2. Recommend that storm response coordinator also be earthquake response coordinator.

R1-117 Page 6-37, Sec. 6.2.3.10.3. Road Daylighting
Recommend that road daylighting not occur for areas where runout buffers provided by standing timber could diminish sediment delivery from untreated, "high" sediment sources.

R1-118 Page 6-38, Sec. 6.2.3.11.2. Seasonal Restrictions
#2. Hauling and loading should only be allowed during this period if the road has been hydrologically disconnected from watercourses.

R1-119 Page 6-38, Sec. 6.2.3.11.4. ATVs
#2. Please refer to comments in Sec. 6.2.3.11.2 for additional restrictions on the use of ATVs.

R1-120 Page 6-39, Sec. 6.2.3.13. Water Drafting
Clarify if fire suppression includes prescribed fire activities or only wildland fire suppression.

R1-121 Page 6-39, Sec. 6.2.3.13.1. Within Class I Watercourse Channels
#3. Please provide the technique that will be employed by water tenders to determine flow within watercourses.

repairs will be provided."

Response to Comment R1-115

Based on Green Diamond's experience, a "significant" rainfall event (e.g. 3 inches in 24-hour period) is the point in which roads have a higher probability of having crossing problems associated with debris. The emergency inspections discussed in AHCP/CCAA Section 6.2.3.10.1 put people on the ground to evaluate road conditions in the area that reached the threshold for rainfall to make any repairs necessary or report significant problems.

No inspections of watercourse crossings after ground shaking is proposed in the Plan. Damage to crossings, whether due to earthquakes or other causes, will be evaluated through the inspection process associated with THPs and through the routine road inspection and maintenance plan described in AHCP/CCAA Section 6.3.3.8, which includes annual inspection of all mainline roads.

Response to Comment R1-116

Comment noted, but not incorporated.

Response to Comment R1-117

As stated in AHCP/CCAA Section 6.2.3.10.3, Green Diamond will evaluate daylighting practices within RMZs on a site-specific basis. If it appears that sediment delivery, from sources within a potential daylighting location, could be accelerated due to the removal of standing timber, those locations would not be daylighted.

Response to Comment R1-118

As stated in AHCP/CCAA Section 6.2.3.11.1, there are provisions in place that minimize potential impacts for sediment delivery and increased turbidity to watercourses as a result of road use. The specific restrictions to hauling and loading during the May 1st through May 14th and October 16th through November 15th periods also minimizes the potential impacts from sediment delivery. AHCP/CCAA Section 6.2.3.11.2. Furthermore, for these activities to occur during the "early spring drying" period, the requirement is that no measurable rainfall has occurred within the last 5 days and no rain is forecast by the National Weather Service for the next 5 days. See AHCP/CCAA Table 6-3. For these activities to occur during an "extended dry fall" the requirement is that less than 4 inches of rainfall has occurred from September 1st through October 15th.

Response to Comment R1-119

See response to Comment R1-118.

Response to Comment R1-120

The AHCP/CCAA Section 6.2.3.13 has been revised as indicated to clarify the terms "fire suppression" and "wildfire":

"These restrictions will not apply to water drafting for wildfire."

Response to Comment R1-121

There are several methods than can be employed to measure the discharge within watercourses when determining if there is sufficient flow for drafting. The method that will probably be used most commonly is the float method. In using the float method, discharge is calculated as the product of cross-sectional area and water velocity over a known length of stream with relatively uniform width and depth. For the cross-sectional area, the average stream depth is estimated by measuring at 0.25, 0.5 and 0.75 intervals across the stream, dividing by four, then multiplying by the total width. Water velocity is estimated by timing (in seconds) a small floating object for three trials over the predetermined length of stream. The predetermined length of stream is then divided by the average time of the floating object.

Response to Comment R1-122

There are several methods than can be employed to measure the discharge within watercourses when determining if less than 50 percent of the surface flow is being diverted. The float methodology can be employed just upstream of the diversion point (see response to Comment R1-121) to calculate the discharge. The discharge of the diversion will be measured by timing (in seconds) how long it takes to fill a 5 gallon bucket at the outlet point of the diversion pipe. Convert gallons to cubic feet (1 gallon = 0.133368 cubic feet) and divide by the time (number of seconds). Then determine the proportion of the discharge of the diversion to the total stream discharge.

Further, the restrictions provided in AHCP/CCAA Section 6.3.3.11 are intended to avoid dewatering of Class I waterbodies and only allow localized temporary dewatering on Class II watercourses. These restrictions have been specifically developed with the idea of protecting aquatic life in these drafting locations.

Response to Comment R1-123

The setbacks are the standard distances that are used for watercourse protection under AHCP/CCAA Sections 6.2.1.2, 6.2.1.4 and 6.2.1.5. This practice would apply to borrow pits that are used for developing rock products for use on the timberland property. An exception would be a couple of existing quarries that are permitted under the Surface Mining and Reclamation Act of 1975 (Pub. Res. Code section 2710 et seq.) and are operating under an approved Conditional Use Permit and Reclamation Plan. The Lead Agency for these plans is Humboldt County Planning Department. There may be specific requirements included in an

R1-122 Page 6-40, Sec. 6.2.3.13.3. Within Class II Watercourses or Impoundments
Please provide the methodology or technique that will be employed to assure that no greater than 50% of the flow shall be diverted. NCRD believes that the diversion of 50% of the flow, especially during drought years, could result in significant adverse affects to aquatic species and that the diversion amount should be significantly lower.

R1-123 Page 6-40, Sec. 6.2.3.14.2. Portions of Existing Quarries within RMZ's
Recommend that the potential stability and runout distance for all quarries be established before determining setbacks.

R1-124 Page 6-40, Sec. 6.2.3.14.3. Turbidity
NCRD recommends that all drainage facilities be hydrologically disconnected from watercourses.

R1-125 Page 6-43, Sec. 6.2.4.2.6. Drainage Structures
See comments reference page 9, Sec. 6.2.1.4.6.

R1-126 Page 6-43, Sec. 6.2.4.2.8. Fireline Construction, Reconstruction, and Use within RMZs and EEZs
NCRD recommends that the same limitations be applied to the construction of firelines within STAs adjacent to State Parks. Strong consideration should also be given to rehabilitation of firelines within STAs, RMZs, EEZs by pulling duff and litter back onto firelines after burns are extinguished.

R1-127 Page 6-48, Sec. 6.2.5. Effectiveness Monitoring Measures
NCRD is concerned that the proposed monitoring measures appear to use the existing conditions as an acceptable standard for measuring the effectiveness of the AHCP. In many areas of the covered lands the current conditions are not within the preferred range of the covered species. Reference conditions should be based on the preferred habitat conditions of the target species.

R1-128 The Effectiveness Monitoring Measures appear to fail to provide any indication of the level of monitoring that will occur. For example how many water temperature sites will be sampled in each HPA? How will they be distributed in each HPA?

R1-129 Page 6-52. Sec. 6.2.5.5.1. Property-wide Temperature Monitoring
Temperature thresholds should be based on the preferred water temperature range of the covered species. Furthermore, these thresholds should be species specific using the lowest common denominator as the threshold. The thresholds currently listed in the AHCP could result in the take of listed species on State Park lands, and/or significant adverse effects to non-listed species. NCRD recommends that a more appropriate Yellow-light 7DMAVG threshold of 16.8ºC for salmonid habitat and a 15ºC for amphibian habitat be adopted.

R1-130 Page 6-53. Sec. 6.2.5.5.3. Tailed Frog Monitoring

approved Reclamation Plan that would include site reclamation work within the standard RMZ width.

Response to Comment R1-124

See response to Comment R1-118. Hydrologically disconnecting roads from the watercourses is something Green Diamond will be doing through the road implementation program while decommissioning and upgrading roads (see AHCP/CCAA Sections 6.2.3.3 and 6.2.3.4 respectively). Furthermore, the construction standards for new roads require them to be hydrologically disconnected (see AHCP/CCAA Section 6.2.3.6). Finally, the turbidity restrictions in AHCP/CCAA Section 6.2.3.11.1 provide measures to minimize the potential impacts for sediment delivery to watercourses from road use

Response to Comment R1-125

The AHCP/CCAA Section 6.2.4.2.6 establishes *"...drainage structures adequate to prevent the delivery of sediments to RMZs or EEZs"* as a standard. This standard goes beyond a standard of discharge to a watercourse as it prevents delivery to the protection zone. If delivery to a protection zone (RMZ or EEZ) cannot be achieved by installation of drainage structures, additional ground stabilization treatments would have to be applied. Additional treatments would be applied on a site-specific basis and could include seeding or mulching with straw, duff or slash.

Response to Comment R1-126

Portions of STAs that lie within an RMZ or EEZ would be treated the same way as any RMZ or EEZ. Portions of STAs that do not lie within an RMZ or EEZ should be treated according to the standard rules. Portions of STAs not included in RMZs or EEZs, steep slope areas or unstable areas are not EEZs for equipment operations. The objective of the AHCP/CCAA is to protect and enhance aquatic habitat. Where aquatic habitat is not threatened, standard CFPR protection measures will apply.

Response to Comment R1-127

"Controls" are used in BACI experimental designs where the objectives are to determine if current timber operations have any effect on some response variable of interest (e.g. water temperature, amphibian populations). Even if the current conditions in the controls are not precisely equivalent to "reference conditions," they can still be used effectively as experimental controls in this context. The criteria that are necessary for a site to be used as a control is that it not have any treatment effects while having similar environmental covariates or nuisance variables (e.g. aspect, elevation, geology, climate) as the treatment site. See also Master Response 1 regarding baseline conditions.

Response to Comment R1-128

AHCP/CCAA Section 6.2.5 directs the reader to AHCP/CCAA Appendix D for additional details regarding monitoring.

Response to Comment R1-129

See AHCP/CCAA Sections 4.3.1, 6.3.5.2.1 and Appendix C. These sections describe how the thresholds were derived based on site-specific data for the three covered species (southern torrent salamander, tailed frog and coho salmon) that are believed to be the most sensitive to increases in water temperature. These site-specific data were considered to be the best available science since there are no data on preferred water temperature ranges for either of the headwater amphibians or for SONCC coho salmon. The water temperature thresholds were further refined to incorporate the relationship between water temperature and drainage area. Without this relationship, it would be possible to substantially increase water temperature in small sub-basins without exceeding a fixed threshold, while water temperatures in selected larger sub-basins would never achieve fixed thresholds regardless of the condition of the channel or riparian vegetation.

The comment recommends a fixed yellow-light water temperature thresholds of 15ºC for the covered amphibians and 16.8ºC for salmonids. The yellow-light threshold proposed in the Plan indicates that most torrent salamanders and tailed frog streams would have a

threshold of about 14.5 and 15.0ºC, respectively, while the threshold for most coho salmon streams would be from about 15.0 to about 17.0ºC. Only a small fraction of the largest coho salmon streams would be compared to the fixed upper threshold of 17.4ºC. A threshold that incorporates site and species-specific data and provides for the natural variability in which populations of a species exists is preferable to fixed thresholds that likely would be ecologically too warm for small systems and too cool for the larger systems.

Response to Comment R1-130

AHCP/CCAA Section 6.2.5.5.3 states that a red light will be triggered if there is a statistically significant decline in larval populations of tailed frogs in treatment streams relative to control streams in greater than 50 percent of the monitored sub-basins in a single year. A statistically significant decline in the larval population does not mean that there is a "major cause for concern." In fact, this result is just as likely to occur when both populations are increasing, but the population in the treatment stream is increasing at a lower rate. In addition, a statistically significant decline does not mean that it is a biologically significant decline. The factors influencing populations are highly complex and a population may decline for demographic or stochastic (random) reasons that have nothing to do with habitat quality.

Response to Comment R1-131

AHCP/CCAA Appendix D, Section D.1.6.3.1, defines the term "sub-population" as "individuals at a given site."

Response to Comment R1-132

AHCP/CCAA Section 6.2.5.5.5 #1 has been revised by Green Diamond as follows:

"The thresholds will be established based on data collected from reference sites, either within stream reaches within the Plan Area that have been demonstrated to support ~~stable~~ populations of the covered species of interest whose abundance and persistence are similar to reference populations monitored outside the Plan Area, or reaches in which the habitat conditions have been shown to be within the range of good conditions based on studies done outside the Plan Area."

Response to Comment R1-133

The AMRA, including how it is funded, its opening balance and how it may change, and how it would be used under the Plan to benefit the covered species and their habitats, is discussed in AHCP/CCAA Sections 6.2.6.3 and 6.3.6.2, as well as in Master Response 15. The Services have found that the AMRA is adequate for the purposes provided in the Plan.

The Services agree that it is the responsibility of the Permit applicant to ensure that adequate funding is available to comply with its obligations under the Plan. As explained in IA paragraph 7, Green Diamond has accepted this responsibility:

R1-130 #2(a). A statistically significantly decline of greater than 50% of a population in a sub-basin is a major cause for concern. This seems to be a very inappropriate red-light threshold. NCRD believes a red-light threshold of 25 – 30% would be more consistent with meeting the intent of the AHCP impact minimizations standards.

R1-131 Page 6-53. Sec. 6.2.5.5.4. Southern Torrent Salamander Monitoring
Please define the term "sub-population".

R1-132 Page 6-54. Sec. 6.2.5.5.5. Other Rapid Response and Response Monitoring Projects and Programs.
Please define the term "stable population".

R1-133 Page 6-54. Sec. 6.2.6. Adaptive Management Measures
NCRD is concerned that as written if the AMRA is deficient in funds that yellow-light or even red-light conditions could be permitted to continue. This could result in significant adverse affects to sensitive species and even take of listed species on covered and adjacent lands. NCRD believes that it should be the applicants responsibility to ensure that adequate funding is available for implementing conservation measures specified in the AHCP.

R1-134 Page 6-60, Sec. 6.2.9.1. Fire
#'s 1 & 2. This conflicts with Sections 6.2.1.2.11, 6.2.1.2.12, and 6.2.1.4.8 which state that salvage will not occur within the Inner Zone, Floodplain, or CMZ of a Class I RMZ or the Inner Zone of a Class II RMZ. Salvage within these zones would remove potential LWD. Please correct 6.2.9.1 to reflect the RMZ prescriptions.

R1-135 Page 6-62, Sec. 6.2.9.3. Earthquakes
Earthquakes greater than magnitude 6 are foreseeable during the life of the plan (see California Department of Conservation, 1995, Division of Mines and Geology Special Publication 115, Planning Scenario in Humboldt and Del Norte Counties, California for a Great Earthquake on the Cascadia Subduction Zone); Recommend that earthquake response consider accelerations in the project area rather than magnitude, including CGS maps showing acceleration zones with 10% exceedance probability over the next fifty years.

R1-136 Page 6-62, Sec. 6.2.9.5. Pest or pathogen infestation
Recommend that 51% reduction in basal area relate to pre-harvest levels to trigger additional treatment. Clarify what the "RF" is that will assess the situation.

R1-137 Page 6-88, Sec. 6.3.2.5.2. Deep-seated landslide prescriptions
Climate records show that significant climate change has occurred at decadal scales. If there was a significant shift in local rainfall resulting from climate change, deep-seated landslides could expect potentially higher rates of

"Green Diamond warrants that it has, and shall expend, such funds as may be necessary to fulfill its obligations under the Operating Conservation Program. Green Diamond shall promptly notify the Services of any material change in Green Diamond's financial ability to fulfill its obligations. In addition, in order to ensure that adequate funding will be provided for the Acceleration of the Road Implementation Plan (AHCP/CCAA Section 6.2.3.2.1) and the Monitoring Projects and Programs (AHCP/CCAA Section 6.2.5.2), which are the requirements of the Operating Conservation Program that have material out-of-pocket costs for the first 15 years of the Plan, Green Diamond shall, by March 15 of each year during the first 15 years of the original term (except to the extent the 15-year period is adjusted as discussed in AHCP/CCAA Section 6.2.3.2.3) provide the Services with additional assurances."

Response to Comment R1-134

The AHCP/CCAA Section identified in the comment refers to actions that will occur in response to changed circumstances. As noted in AHCP/CCAA Section 6.2.9.1, the strategy for responding to and suppressing forest fires generally is established by CDF. Green Diamond may have little ability to influence such strategy. However, to the extent reasonably possible and where consistent with the primary goal of containing and extinguishing the fire, Green Diamond will encourage the development of a fire-response strategy that is consistent with the other Section 6.2 measures, including the RMZ prescriptions, and that furthers rather than diminishes the functions that such measures have been designed to provide.

Response to Comment R1-135

Earthquakes are a common occurrence in Northern California. The Services do not believe that earthquakes greater than magnitude 6 that would substantially alter habitat status for the six aquatic covered species, or require additional conservation or mitigation measures in excess of those already included in the Plan, are reasonably foreseeable during the life of the Plan. Recommendation to consider accelerations in the Plan Area was considered, but rejected.

Response to Comment R1-136

The proposed practice of evaluating conditions within any SSS, headwall swale, or Tier B Class III watercourse would apply anytime a stand treatment activity is proposed, whether it be a vegetation management activity, pre-commercial thinning, commercial thinning, selective or clearcut harvest. Commercial operations are conducted under an approved THP, while no THP is required for a pre-commercial thinning operation. The "51 percent or more" standard stated in AHCP/CCAA Section 6.2.9.5 relates to a pre-operations condition.

The abbreviation "RF" used in AHCP/CCAA Section 6.2.9.5 was a typographical error that has been corrected: The correct abbreviation is "RG," which means Registered Geologist.

Response to Comment R1-137

Climate records alone are not an indicator of the future susceptibility of the landscape to deep-seated landslide processes. Establishing a direct linkage between climate change and deep seated landslides would require an analysis of cumulative impacts that is filled with hypothetical variables. Such an analysis is beyond the scope of the Plan. Therefore, the Services would consider it unreasonable to require conservation measures for hypothetical environmental conditions and consequences that cannot be predicted or evaluated with any reasonable certainty.

Response to Comment R1-138

The commenter may have misinterpreted the context of AHCP/CCAA Section 6.3.3.5.2. Every road will be evaluated during the road assessment process to determine the cost-benefit of reopening the road for treatment, taking into account the amount of sediment that could be delivered if untreated. Just because a road is revegetated does not mean that Green Diamond will not treat the road The association of unstable areas with roads will be considered on a site specific basis in accordance with accepted forest road assessment protocols and at a level of analysis commensurate with the experience of the field personnel.

Response to Comment R1-139

The prioritization tables incorporate two geomorphic criteria (slope risk based on weighted slope classes and watercourse crossing risk based on watercourse densities). As discussed in AHCP/CCAA Appendix F2, episodic sediment delivery from failing watercourse crossings and landslides from road fill slopes (and rarely road cuts, too) delivers relatively large quantities of sediment to the stream systems. AHCP/CCAA Table F2-1 quantifies the percentages of sediment from these sources. The importance of these two geomorphic criteria represent simplified but meaningful consideration of fundamental geomorphic factors (stream crossing density and slope class) so that a workable prioritization process can be implemented.

Relative weakness of earth materials is a consideration with respect to sedimentation from the chronic erosion of road surfaces, however it is not typically significant compared to the major

R1-137 reactivation than at present. Recommend that a trigger mechanism to address this potential be incorporated over the 50-year life of the plan.

R1-138 Page 6-92, Sec. 6.3.3.2.1. Transportation plan, paragraph 2 (also see 6.3.3.5.2 Permanent and temporary decommissioning)
Assumption that revegetated abandoned roads are non-problematic may be flawed if the road has hydrologic linkages that either accelerate flow or increase water delivery to unstable slopes. Restoration of these sites would also provide a better growing medium for timber than a sterile road bench and increase the production area by eliminating steep cutbanks that are unlikely to revegetate. Recommend that hydrologically linked-abandoned roads that delivery water to mapped landslides or high SHALSTAB risk areas have professional geologic analysis for treatment prioritization.

R1-139 Page 6-94, Sec. 6.3.3.2.2. Prioritization of sub-watershed RWU's
¶ 3. Recommend that areas with adverse geologic structure and weaker earth materials be identified as part of prioritization.

R1-140 Page 6-102, Table 6-13.
Roadwork timing will also be affected by temporal and spatial restrictions associated with T&E terrestrial species, and BOF and CSC species.

R1-141 Page 6-123, Sec. 6.3.3.11. Restrictions
Last sentence – Clarify if fire suppression includes prescribed fire activities or only wildland fire suppression.

R1-142 Page 6-177, Sec. 6.3.9.1.1. The Role of Fire in Coastal Northern California
Work by Brown, P. M. and T.W. Swetnum, 1994, "A cross-dated fire history from coast redwood near Redwood National Park, California" should be included in this Sec.

R1-143 Page 6-181, Sec. 6.3.9.3. Earthquakes.
¶ 1. Earthquakes are currently impossible to predict at precise times. However, probability theory can be used to assess the likelihood of earthquakes over longer time intervals, similar to the one covered by this plan. Some of the probability concepts are similar to the SHALSTAB and Monte Carlo concepts used in this plan. Recommend zonation of geologic risk and analysis for areas shown by CGS mapping (for zones equal to or greater than .4 g [gravity]) to have an exceedance probability of at least 10% over the next 50 years (see 4.2.1.4).

R1-144 ¶ 2. Earthquakes of April 1992 caused extensive cutbank failure in the epicentral region - "most slides identified are to some extent associated with…the many miles of logging roads constructed throughout the area" (Dunklin, T., 1992, Local effects of 1991-1992 earthquake sequence, p. 197-198, Friends of the Pleistocene, Pacific Cell, Guidebook for the field trip to Northern Coastal California).

mechanisms of road related sediment delivery, which are stream crossings and landslides (mostly from road fills).

Response to Comment R1-140

As indicated in AHCP/CCAA Section 1.4.2, the conservation measures in the Operating Conservation Program generally supplement, and do not replace, the CFPRs. Further, these rules have provisions for incorporating HCP measures in certain cases. Because Green Diamond remains subject to the CFPRs following Plan approval and Permit issuance, the Services do not believe it is necessary to repeat each potentially applicable CFPR in the Operating Conservation Program.

Response to Comment R1-141

The last sentence in AHCP/CCAA Section 6.3.3.13 has been revised as indicated to clarify the terms "fire suppression" and "wildfire":

"These drafting criteria do not apply to water drafting for wildfire."

The last sentence in AHCP/CCAA Section 6.3.3.11 has been revised as indicated to clarify the terms "fire suppression" and "wildfire":

"These drafting criteria do not apply to water drafting for wildfire."

Additionally, the description of water drafting as a covered activity was correspondingly changed as follows (AHCP/CCAA Section 2.2.7):

"Water drafting involves the direct drafting of stream flow into a water truck which is then periodically sprinkled or otherwise applied for dust abatement, road maintenance, road construction, surfacing, or prescribed fuel reduction burning. Water may also be obtained by the use of gravity fed systems that provide water directly to storage reservoirs or tanks for similar use. Occasionally, existing drafting locations within or adjacent to watercourses are excavated and cleaned of debris to increase their in-channel storage area for drafting purposes."

Response to Comment R1-142

Suggestion noted, but not incorporated. Green Diamond has elected not to include the suggested reference. Further, the Services note that AHCP/CCAA Section 6.3 is not part of the Operating Conservation Program itself, and therefore contains no prescriptive measures. Instead, the purpose of AHCP/CCAA Section 6.3 is to provide intent language that will guide implementation of the Operating Conservation Program.

Response to Comment R1-143

California Geologic Survey's (CGS) 10 percent probability of exceedance in 50 years maps depict an annual probability of 1 in 475 for a particular size earthquake being exceeded in one year. Alternatively, these maps may be read as showing zones where a 90 percent chance exists that the specified ground motions will NOT be exceeded. Based on CGS' description of their Probabilistic Seismic Hazard Assessment, these maps are used primarily for building design. This probability level allows engineers to design buildings for larger ground motions than what is thought will occur during a 50-year interval. AHCP/CCAA Section 6.2.9.3 notes that earthquakes of such magnitude that may substantially alter habitat status or require additional conservation or mitigation measures in excess of those already included in the Plan, are not reasonably foreseeable during the term of the Plan.

Response to Comment R1-144

Comment noted. As discussed in AHCP/CCAA Section 4.2.1.1 and 4.2.3, the AHCP recognizes the possibility of earthquake triggered landslides, both along roads and in the natural hillslopes in the Plan Area.

Response to Comment R1-145

Yes. See AHCP/CCAA Section 6.3.9.4 ("a flood that is equal or greater in magnitude than a 100-year recurrence interval event is not reasonably foreseeable during the term of this Plan") and AHCP/CCAA Section 6.3.9.3 (earthquakes that may substantially alter habitat or require additional conservation measures that are not already in the Plan, e.g., earthquakes of greater magnitude than 6 on the Richter scale, are not reasonably foreseeable during the term of the Plan).

Response to Comment R1-146

Comment noted. The Services considered, but rejected, the recommendation to impose response times.

Response to Comment R1-147

Comments relative to the differences between NEPA and CEQA have been noted. NEPA applies to the Services' consideration of the Plan and application for the Permits under the ESA. CEQA does not apply to the Plan and ESA Permits but would continue to apply to discretionary decisions made by State agencies with regard to activities in the Plan Area, such as approval of a THP by the CDF, or approval of a reclamation plan for quarrying activities under the Surface Mining and Reclamation Act (see AHCP/CCAA Section 2.2.6 regarding rock pit construction and use in the Plan Area). Pursuant to State law, Green Diamond and these other agencies will address CEQA issues as they arise.

R1-145 Page 6-182, Sec. 6.3.9.4. Flood.
¶ 4. Floods up to 100-year recurrence are thought to be expected normal ecology but earthquakes that might occur within the next 50 years are unforeseen?

R1-146 Page 6-184, Sec. 6.3.9.6.2. Landslides – Supplemental Prescriptions
Recommend that a specific time frame be developed for a qualified geotechnical expert to complete his report. Recommend that a qualified expert review the report.

Draft Environmental Impact Statement

General Comments

R1-147 The NCRD is concerned that should Simpson Resource Company attempt to obtain approval of the AHCP by the State that the DEIS is not sufficient in regards to compliance with the California Environmental Quality Act. While requirements under CEQA and NEPA are similar there are significant differences. CEQA places a higher value on environmental protection than NEPA. CEQA requires that where feasible actions incorporate changes or alterations that fully mitigate or avoid significant adverse effects on the environment. NEPA only requires that federal agencies consider the potential significant adverse impacts associated with an action. CEQA also places a higher value on environmental protection compared to NEPA, which places a higher value on economic growth.

R1-148 The DEIS only acknowledges that Redwood National and State Parks is adjacent to the covered lands. The term "Redwood National and State Parks" is a management unit consisting of three state parks and Redwood National Park. In addition to covered lands adjacent to Redwood National and State Parks, the applicant owns lands adjacent to several other State Park units: Humboldt Lagoons State Park, Harry A. Merlo State Recreation Area (including 3 Natural Preserves), Azalea State Reserve, Little River State Beach, and Grizzly Creek State Park. Protection of natural resources in these State Park lands is provided for under provisions of the California Public Resources Code.

R1-149 The DEIS does not contain an adequate assessment of impacts to the numerous special status plant and animal species, which may occur in the area, nor does it

R1-150 evaluate impacts associated with timber operations to the values of adjacent State Parks.

R1-151 The DEIS does not provide an adequate analysis of cumulative effects. The DEIS only evaluates effects of the AHCP within the Primary Assessment Area (PAA), which

Response to Comment R1-148

Comment noted. Text in EIS Sections 3.8 (Visual Resources) and 3.11 (Land Use) have been modified to distinguish between "Redwood National and State Parks" and other State parks adjacent to the Primary Assessment Area.

Response to Comment R1-149

Fifty-one plant species of concern are located within the Primary Assessment Area, as described and discussed in EIS Section 3.5.4 (Plant Species of Concern). Of the 51 plant species of special concern, four are federally and/or State listed as endangered and an additional 11 are Federal species of concern. Potential impacts to the 51 plant species have been discussed in EIS Sections 4.5.2.3, 4.5.3.3, 4.5.5.3 and 4.5.7, and summarized in Table 4.5-1 (Plant Species of Special Concern: Habitat Associations and Potential Impacts). The EIS concluded, based on plant and habitat descriptions provided in Green Diamond's 1992 NSO HCP (see AHCP/CCAA Section 1.4.3) and the July 2000 California Native Plant Society (CNPS) rare plant database, that for all plant species and all alternatives, either no impacts would occur or the impacts would be minimal and, therefore, less than significant. These conclusions are based on continued adherence by Green Diamond under all the alternatives to special protections afforded to unique habitats (such as meadows and wetlands) contained in the CFPRs, Green Diamond's own Plant Protection Program (as described in EIS Section 4.5.2.3), and other measures identified during the THP preparation and review process. In addition, under all of the alternatives, many of the species' habitats would not be disturbed by Green Diamond's activities or would be disturbed only incidentally resulting in negligible changes to these habitats over time.

Similarly, 48 special-status wildlife species have the potential to occur within the Primary Assessment Area, as described and discussed in EIS Section 3.6.3 (Wildlife Species of Concern). Of these 48 wildlife species, eight are federally and/or State listed and an additional 11 are Federal species of concern. Potential impacts to the 48 wildlife species have been discussed in EIS Sections 4.6.2.3, 4.6.3.3, 4.6.5.3 and 4.6.7, and summarized in Table 4.6-1 (Wildlife Species of Special Concern: Habitat Associations and Potential Impacts). The EIS concluded that for all wildlife species and all alternatives, either no impacts would occur or the impacts would be minor and, in general, beneficial. Minor beneficial impacts are anticipated to occur to those species that occur in riparian and/or late seral habitats based on benefits anticipated to occur to these habitat types as described in EIS Section 4.5 (Vegetation/Plant Species of Concern).

Response to Comment R1-150

The Proposed Action, as described in EIS Section 2.2, is implementation of the Plan's Operating Conservation Program (AHCP/CCAA Section 6.2) within the Action Area and issuance of an ITP and ESP for the covered fish and amphibian species. Under the Proposed Action, Green Diamond would also continue to conduct timber harvesting and the other covered activities (see AHCP/CCAA Section 2) in accordance with the CFPRs (see EIS Section 1.5.3.1 and AHCP/CCAA Section 1.4.2) and Green Diamond's NSO HCP (see EIS Section 1.6.3.1 and AHCP/CCAA Section 1.4.3). Many other existing operational programs and policies, described in EIS Section 2.1 (No Action Alternative) would also continue to be implemented under the Proposed Action. The potential impacts associated with the Proposed Action and the underlying covered activities (e.g., timber and other forest management operations) are assessed throughout EIS Chapter 4 (Environmental Consequences). Direct and indirect impacts are analyzed for the Primary Assessment Area (all commercial timberlands within the 11 HPAs); cumulative impacts are analyzed for the 11 HPAs in their entirety, including the State Parks.

Under the Proposed Action and other action alternatives, Green Diamond would continue to be obligated to adhere to the CFPRs, which include requirements to: (1) prepare individual timber harvesting plans (THPs), (2) conduct THP review by an interdisciplinary review team (that includes representation from State Parks for some THPs), and (3) THP approval by the California Department of Forestry and Fire

Protection (CDF). It is anticipated that Green Diamond, CDF, and others (including State Parks) may on occasion and on a site-specific basis propose mitigations that go beyond the conservation measures in the proposed AHCP/CCAA. Additional text has been added to EIS Section 2.2 (Proposed Action) for purposes of clarifying Green Diamond's continued obligations to adhere to the CFPRs and the THP review process.

Response to Comment R1-151

Refer to Master Response 3. Further, as discussed in EIS Section 4.1.1 (Scope of Analysis), the geographical area for assessment of cumulative impacts is the 11 HPAs (1,265,069 acres), which include the 683,674 acres (plus an additional 25,677 acres under Alternative C) comprising the Primary Assessment Area. The 11 HPAs include State Parks lands.

In consideration of actions to include in the cumulative impacts assessment in this EIS, past, present, and reasonably foreseeable future actions that have the potential to combine with incremental effects of the Proposed Action (or alternatives), if any, to result in cumulative impacts, are those that:

- Have an application for operations pending before an agency with permit authority

- Could affect similar environmental resources, or are located in geographic proximity to the Proposed Action

Other actions may be in the planning stages or in other preliminary formulation processes (i.e., not subject to current environmental or permitting review). Consistent with NEPA, these efforts were not addressed in the EIS. In addition, actions outside the 11 HPAs were not assessed because they are beyond the scope of the cumulative impacts assessment.

Comments relative to differences between NEPA and CEQA have been noted. See response to Comment R1-147.

Response to Comment R1-152

As noted in EIS Chapter 3 (Affected Environment), water temperatures (7DMAVG) have been reported and acknowledged to be above preferred temperature ranges for several species in some of the HPAs within the Primary Assessment Area. NEPA does not require analysis of effects on aquatic resources and listed species outside the scope of the Plan and Permits. Instead, NEPA requires that the EIS analyze the impacts of the Proposed Action (implementation of the AHCP/CCAA) relative to the No Action Alternative. See Master Responses 1 and 2 regarding baseline conditions and the No Action Alternative.

The Proposed Action's overstory canopy closure requirements tree retention standards are more protective than those that would be implemented under the No Action Alternative, particularly in Class II watercourses (see AHCP/CCAA Section 6.2.1 and EIS Chapter 2 for a description of these measures). Implementation of these measures would help to maintain stream shading in the critical "inner zone" where microclimate effects are anticipated to have the greatest potential to affect water temperatures. Although the inner zone width along Class I watercourses is slightly less under the Proposed Action (50-70 feet) than under the No Action Alternative (75 feet), Class II RMZs under the Proposed Action are considerably wider than under the No Action Alternative (75-100 feet compared to 50-75 feet), and require greater overstory canopy retention (70% compared to 50%). Overstory canopy closure, while expected temporarily to slightly decrease immediately following harvesting, is likely to increase relative to current conditions and the No Action Alternative in all stands as they regenerate following previous timber harvesting (see EIS Section 4.3.3.2 and AHCP/CCA Appendix C-5.2. As discussed in

constitutes those lands that Simpson Resource Company currently owns or may own in the future. It therefore does not evaluate potentially significant adverse affects that may occur on adjacent lands such as the State Parks. Under CEQA, this would not only be considered an inadequate cumulative watershed analysis but would also be inadequate to address direct affects. R1-151

The DEIS also does not adequately evaluate the existing impaired condition of many of the watersheds within the PAA. Currently many of the watersheds have 7DMAVG temperatures that are in excess of the preferred temperature range of the species. Neither the DEIS nor the AHCP addresses how these adverse water temperatures will affect aquatic resources and listed species on adjacent lands. R1-152

The DEIS lacks the supporting data and information to support the prescriptions in the AHCP. The DEIS does not acknowledge that there is insufficient information regarding the base line conditions within the adjustment area to assess the magnitude of incidental take. R1-153

Specific Comments on the DEIS & Appendices

Page 1-9, Sec 1.5.3.1
¶ 2, Environmental Review Process. Review team includes the Department of Parks and Recreation depending on the potential of the harvest to adversely affect park resources. R1-154

Page 2-6. Sec. 2.1.1.3. Road and Landing Construction, Reconstruction and Maintenance
Recommend that rock quality for roads be addressed. Recommend that amphibian passage at culverts be addressed. Recommend that environmental impacts of dust palliatives be addressed. Recommend that guidelines be provided to trigger analysis of bridge construction feasibility. R1-155

Page 2-8, Sec. 2.1.2 Simpson's Other Operations and Activities
Recommend that the geologic stability of artificial ponds used for drafting, fire management, sediment retention and/or other uses be addressed. R1-156

Page 4-5, Sec. 4.2 Geology, Geomorphology and Mineral Resources
Recommend that the potential impact of earthquakes within the planning area be addressed. CGS is scheduled to model hillslope instability from seismicity in the Eureka area in the coming years (currently a mid-level priority). R1-157

Page 4-108, Sec. 4.8. Visual Resources
The DEIS does not provide any information or data to support the statements made that there will be no potential for visual impacts. These statements are conclusionary and unsupported. R1-158

EIS Sections 3.3.5 and 3.4.2.2, decreases in water temperature generally are beneficial to aquatic resources. See EIS Section 4.4 for a discussion of impacts to aquatic resources.

Response to Comment R1-153

See Master Response 1 regarding baseline. In the Plan, see AHCP/CCAA Section 4.4, which provides an HPA-by-HPA assessment of habitat conditions and AHCP/CCAA Appendix C presenting studies, surveys and assessments of covered species and their habitats, including references to the data and information that were used to support the Plan's analysis. In the EIS, see Section 3, describing the affected environment.

As noted in EIS Section 4.1.1 (Scope of Analysis), and discussed in more detail in AHCP/CCAA Sections 5 and 7 and IA paragraph 11.2, general habitat and environmental conditions across the Primary Assessment Area share similar relevant characteristics. Accordingly, adding such lands to the Plan Area during the term of the Permits is not expected to result in adverse effects on the covered species different from those analyzed in connection with the original Plan Area. For purposes of analysis, site-specific information on Green Diamond-owned lands have been extrapolated to other commercial timberlands within the Primary Assessment Area. See also the response to Comment R1-6, for example, regarding the proposed addition of acreage to the Plan Area.

It is unclear from the comment what is meant by "insufficient information" because the commenter does not point to where the information is insufficient.

Response to Comment R1-154

Comment noted. Additional text has been added to EIS Section 1.5.3.1 to note review team participation by the California Department of Parks and Recreation and the National Park Service for some THPs.

Response to Comment R1-155

EIS Chapter 2 (Proposed Action and Alternatives) has been prepared as required by NEPA. According to the CEQ Guidelines (40 CFR Section 1502.14), this section of the EIS should:

- Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.

- Devote substantial treatment to each alternative considered in detail, including the proposed action so that reviewers may evaluate their comparative merits.

- Include reasonable alternatives not within the jurisdiction of the lead agency.

- Include the alternative of no action.

- Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.

The discussion in EIS Section 2.1.1.3 (Road and Landing Construction, Reconstruction, and Maintenance) describes Green Diamond's existing operational programs and policies; these serve as a baseline for comparison with the No Action Alternative. Departures from this baseline have been summarized for the alternatives, especially the No Action Alternative, in the EIS. Discussions of the conditions expected to result with implementation of each of the alternatives have been presented in EIS Chapter 4 (Environmental Consequences). See also EIS Table 2.7-1 (Description of Alternatives).

As noted above in the response to Comment R1-150, Green Diamond

would continue to be obligated to comply with the CFPRs whether or not the Plan was approved and the Permits issued. Plan approval and issuance of the Permits would supplement this existing regulatory regime. In other words, Plan approval and issuance of the Permits under the ESA would not excuse Green Diamond from any obligation to comply with otherwise applicable laws - Green Diamond would continue to be subject to regulatory requirements with or without the Permits. Further, issuance of the Permits under the ESA does not affect other agencies' jurisdiction under Federal or State law. Federal and State agencies would continue to govern activities in the Plan Area following issuance of the Permits just as if no permits were issued, and would participate in the THP process just as if no permits were issued. For these reasons, a measure-for-measure comparison with the CFPRs (which have been discussed in Master Response 7) is not necessary - following Plan approval and issuance of the Permits, Green Diamond would be obligated to comply with both the CFPRs and the prescriptions included in the Plan. Accordingly, under the Proposed Action and other action alternatives, the following would be required by the CFPRs to occur in the Plan Area: (1) preparation of THPs, (2) THP review by an interdisciplinary review team (that includes representation from State Parks for some THPs), and (3) THP approval by CDF. It is anticipated that Green Diamond, CDF, and others (including State Parks) may on occasion and on a site-specific basis propose mitigations that go beyond the conservation measures in the proposed Plan.

In any case, the selection of specific prescriptions, including measures to address the construction of roads and landings, is a matter of the Permit applicant's discretion (HCP Handbook at 3-19). The Services' role in designing the conservation program is to "be prepared to advise" during the development of the Plan and to judge its consistency with the ESA approval criteria as a whole once the application is complete (HCP Handbook at 3-6 and 3-7). The ESA does not require that any particular measure be adopted or imposed, but only that its criteria for Permit issuance be met. Issuance criteria have been discussed in AHCP/CCAA Section 1.4.1 and Master Response 8. The Services expect, based on the analysis provided in the Plan and EIS, that implementation of the Operating Conservation Program would meet ESA requirements. See also responses to Comments G10-24 and G10-51, for example, regarding the selection of different or additional conservation measures.

Response to Comment R1-156

See response to Comment R1-155.

Response to Comment R1-157

The EIS provides a description of known active and inactive faults in the Primary Assessment Area and summarizes the relationship of these faults to landslide-prone terrain. An example of this is noted in the following statement from EIS Section 3.2.2.3 (Seismic Hazards, Faults, and Structural Relationships):

"Faults that exhibit evidence of recent activity may also delineate potential geologic hazard zones (i.e., occurrence of high ground accelerations resulting from earthquakes on nearby faults may directly or indirectly result in slope failures)."

The activity of known faults is also discussed in EIS Section 3.2.2.3. In addition, EIS Section 3.2.4 (Geology, Topography, and Geomorphology of the HPAs and Rain-on-Snow Areas) notes the location of faults in the individual HPAs. The potential impact of earthquakes in the Primary Assessment Area cannot be predicted. Current methods for predicting impacts include quantitative modeling of the effects of seismicity on slope stability. These predictive approaches, however, are beyond the standard of practice for forest management due to the high level of difficulty, cost, time, local site disturbance, and questionable reliability of results that can be expected in the forested Franciscan complex terrain found within the Primary Assessment Area.

Response to Comment R1-158

EIS Section 4.8 concludes that there would be no visual impacts *relative to the No Action Alternative* (emphasis added). The potential for adverse visual impacts is fully acknowledged under the discussion of the No Action Alternative in EIS Section 4.8.2, including the following statement.

"Green Diamond's activities have the potential to affect aesthetic

resources by introducing elements that interrupt the visual continuity of the landscape, such as even-aged harvesting. Timber harvesting within the Action Area would be conducted within sight of scenic highways (e.g., U.S. Highway 101 and State Highway 299) and recreation areas on adjacent public lands (e.g., Redwood National and State Parks, Smith River National Recreation Area). These operations can diminish aesthetic resources enjoyed by the public."

The discussion of the No Action Alternative describes how Green Diamond currently implements CFPR measures for aesthetics (see EIS Section 4.8.2 and response to Comment R1-159 below). The qualitative analysis of the Proposed Action and other action alternatives describes how Green Diamond's timber harvesting and forest management activities would change (e.g., by enhancing RMZs and establishing EEZs), and concludes that, overall, the individual and cumulative result of implementing any of the action alternatives, including the Proposed Action, would result in less-than-significant changes to visual resources relative to the No Action Alternative in each of the 11 HPAs over time (EIS Section 4.8). In other words, implementation of the covered activities in areas that could be viewed by the public would occur either with or without Plan approval and issuance of the Permits. Although the measures currently used by Green Diamond to protect Class I, II and III streams would be supplemented under the Proposed Action (implementation of the Operating Conservation Program) by the establishment of RMZs for Class I and II streams, establishment of EEZs for Class III streams, and limited activities within the RMZs and EEZs, the potential for impacts to visual resources under the Proposed Action is expected to be comparable to the conditions expected to occur over time under the No Action Alternative (EIS Section 4.8.3).

Visual simulations to demonstrate this conclusion would be difficult because precisely when and where specific visual changes would occur cannot be predicted - the ongoing nature of timber harvesting activities over a broad geographic area would require significant assumptions that would preclude a meaningful analysis based on visual simulations. In addition, scoping comments did not call for a rigorous analysis of potential visual changes.

Response to Comment R1-159

This statement in EIS Section 4.8.3 is not intended to convey that the AHCP/CCAA includes "ownership-wide mitigation, management, and monitoring measures" for visual resources over and above what would normally be implemented under the No Action Alternative. Consistent with the CFPRs, these measures, which have been described in EIS Section 4.8.2 (No Action Alternative), include the following.

- Individual clearcuts cannot exceed 40 acres.
- Individual clearcuts shall be separated by an area at least as large as the clearcut or 20 acres, whichever is smaller, and shall be separated by at least 300 feet in all directions.
- Units adjacent to a clearcut can undergo even-aged harvesting after a specified amount of time has passed, or the clearcut has regenerated to an approved age- or size-class composition.
- Clearcuts should be irregularly shaped and variable in size in order to mimic natural patterns and features found in landscapes.
- Special consideration for aesthetic enjoyment must be given to silvicultural treatments and timber operations within 200 feet of the edge of the traveled surface of any permanent road maintained by the County or the State, or within 200 feet of adjacent non-Federal lands not zoned for timber production.

It would be neither appropriate nor necessary to incorporate these

R1-159 Page 4-109, Sec. 4.8.3. Proposed Action
Describe the proposed ownership-wide mitigation, management and monitoring measures proposed for visual resources. These measures need to be incorporated into the AHCP (Sec. 6.2).

Appendix F

R1-161 F1.2.1.3 Road –related landslide sediment, paragraph 1
Was there any inventory of problematic road hydrology caused by cutbank failures that stayed on the road?

R1-162 Identify the percentage of "road" landslides that were cutbank failures that overtopped the road.

R1-163 F1.2.5.1 Clearcut harvest ratio, paragraph 3
The report does not indicate when Simpson began planting at the conifer stocking standards that support a return of cohesion values within 16 years. This suggests that an unknown percentage of the plan area could be at higher risk for failure if previous harvests did not have restocking (see 6.2.2.1.7 comment). Recommend that these areas be identified and prioritized for restoration forestry.

R1-164 F1.2.2.1.4 Slide depths, paragraph 2
Section indicates that deep-seated landslides may be up to 100 feet deep. Recommend explanation of how a 25-foot setback from a 100-foot high scarp is adequate to promote instability from secondary landsliding. Include discussion of the adequacy of the setback when there are potential shallow failure planes exposed by the scarp (fractures/bedding) that project farther than 25 feet upslope.

R1-165 F1.2.2.1.6 Harvest-derived sediment, paragraph 6
The plan is unclear whether 5 to 10% retention on deep-seated landslides is required nor is it clear on how this value will be tracked over the property.

R1-166 F1.2.2.1.6 Harvest-derived sediment, paragraph 7
How is active scarp defined? The apparent lack of definition for this term and other geologic qualifiers makes it difficult to provide proper review for the plan.

R1-167 F1.2.3.1.1 Road related landslides, comparison of road and skid trail features, paragraph 6
Recommend that the access to and length and location of hydrologic disruption caused by legacy skid trails be factored into their treatment prioritization rather than just a decay of failure rate as their imprint on the landscape will continue to affect already failed slopes. The period covered by "legacy" is not defined.

requirements into the Plan because the criteria for issuing an ITP or ESP do not include objectives for visual quality. However, Green Diamond would continue to implement the CFPR visual quality measures as part of its ongoing management activities.

The sentence referred to by the commenter in EIS Section 4.8.3 has been revised as follows:

"Green Diamond also would continue to implement ownership-wide mitigation, management, and monitoring measures in accordance with the requirements of the CFPRs."

Response to Comment R1-161

Pilot road assessments did include qualitative observations of favorable and unfavorable and redirected road drainage. However, no comprehensive, systematic study of that particular aspect of road drainage has been completed to date.

Response to Comment R1-162

Pilot road assessments included qualitative observations of unfavorable roadcut conditions. However, no comprehensive, systematic study of that particular aspect of roads has been completed to date.

Response to Comment R1-163

The Forest Practice Act of 1975 included requirements for restocking harvested sites. Replanting of harvested sites with nursery grown seedlings has been the standard practice on Green Diamond timberlands since 1974. Stocking standards require a point count of at least 300 trees per acre that have been in the ground at least two years. The standard planting spacing to achieve the final stocking requirement is 10' x 10' for an average of 435 trees planted per acre or 12' x 12' for an average of 300 planted trees per acre. Harvest units that do not meet a stocking standard of at least 300 Group A conifer seedlings that are at least 2 years old must be replanted until that standard is met. Final re-stocking is inspected and approved by California Department of Forestry Inspectors.

Response to Comment R1-164

Some landslides may be as much or more than 100 feet deep, according to discussion presented in the Plan. Landslides of this depth do not necessarily exhibit 100-foot high scarps. According to Green Diamond staff, scarp heights of 100 feet for DSLs are unknown in the Plan Area, except in association with the largest, typically dormant or relict landslides and landslide-related topography. Where such landscape features do exist, no prescription is required under the Plan on the basis that only active DSLs require a conservation measure.

With respect to the request for discussion of the possible presence of structural planes that project to intersect the ground surface beyond 25' from a DSL scarp, the Services acknowledge the possible existence of this ground condition within the Plan Area. However, due to the structural and compositional heterogeneity and complexity that characterizes the Franciscan bedrock in the Plan Area, locations of such ground conditions are presently unknown and such locations are likely to be rare. Also, depending on the location of a scarp, and the location and class of watercourses in the area, and other ground conditions, other conservation measures described in the Operating Conservation Program may apply to the area of the hypothetical ground conditions that might incrementally mitigate risk of management-related sediment delivery to a watercourse.

Response to Comment R1-165

The Plan does not require 5 - 10 percent retention on DSLs nor does it require that cumulative harvest on DSLs, either individually or collectively, be tracked as data. The referenced discussion in AHCP/CCAA Appendix F, section F1.2.2.1.6, is provided to describe how the management related sediment contribution from deep seated landslides was modeled. The AHCP/CCAA Sections 6.2.2.3 and 6.3.2.5 describe the required conservation measures for DSLs in the Plan Area.

Response to Comment R1-166

AHCP/CCAA Sections 6.2.2.3.1 and 6.3.2.5.1 describe the criteria that trigger the conservation measures for deep-seated landslides.

Response to Comment R1-167

Legacy" skid trails include skid trails that were constructed before the most recent revisions of the CFPRs. The AHCP/CCAA Section 6.2.4.6 addresses legacy skid trails that pose a significant threat of sediment delivery. As discussed in AHCP/CCAA Section 6.2.4.6, necessary repairs will be addressed during the THP process.

R1-168 F1.2.3.2 Deep-seated landslide results, paragraph 4
Recommend that forested earthflows be provided significant additional retention levels beyond the 5 to 10% level proposed in the document in light of the assertion of much higher rates of sediment delivery from those landslides.

R1-169 F1.2.3.2 Deep-seated landslide results, paragraph 5
Recommend that road effects on deep-seated landslides be monitored and adjusted as necessary over the life of the plan.

R1-170 F2.2.1 Chronic erosion, paragraph 1
Recommend that the potential effects of fire and nearby timber harvesting for surface erosion on vegetated, abandoned roads be considered in future hydrologic linkage analysis.

R1-171 F2.2.1 Chronic erosion, paragraph 2
The "threat…to the aquatic system" posed by increased runoff is not specifically addressed in the plan.

R1-172 F2.3 Results
The delivery volume does not account for secondary effects of the sediment, such as bank erosion, nor does it address mobilization of legacy storage elements, which can be substantial (Koehler et al., 2002, The role of stored historic sediment in short-term sediment production, South Fork Noyo River, Jackson State Demonstration Forest, California, Geological Society of America Abstracts with Programs, Cordilleran Section, v.34, no 5, p A-90). Recommend that the treatment prioritization account for the potential travel distance of the delivered sediment through the property and the downstream receptors because of the sediment's compounding effects.

R1-173 F2.3.1.1 Assumptions employed in general road sediment analysis, number 3
Using Pacific Lumber data for erosion and delivery rates will tend to indicate higher than actual rates on Simpson Land because of the geology of most of Pacific Lumber's holdings (see the geologic description of the Eel River HPA in comparison with other HPA's and the distribution of landslides on most published maps near the Mendocino Triple Junction – e.g., the CGS watershed series of maps from the early 1980's). Therefore reductions in sediment from these levels for the Simpson property will be inaccurately "overcredited".

R1-174 F2.4.1.2.1 Future landslide volumes
It is unclear how the requirement for physical evidence of road failure relates to the SHALSTAB predictive analysis. It is not clear how road management relates to SHALSTAB analysis nor is it clear how the SHALSTAB analysis was used to predict sediment volumes and delivery. Without this information it is not possible to properly review and provide comment on the plan.

Response to Comment R1-168

The AHCP does not propose a defined minimum amount of tree retention on earthflows. The same criteria for deep seated landslides described in AHCP/CCAA Section 6.3.2.5.1 applies to earthflows. Other discussion of earthflow movement rates presented in Appendix F, Section F1.2.2.1.5, notes that forested earthflows move much more slowly than grassland earthflows. Also, as discussed in AHCP/CCAA Appendix F, Section F1.2.2.1.6, the beneficial effects of tree retention on DSLs, including earthflows, is difficult to quantify at present. For these reasons, more extensive conservation measures for DSLs were not selected in favor of more minimization of sediment from roads and other MWPZs where the Services believe the covered activities are likely to have more of an effect on the covered species.

Response to Comment R1-169

The Services believe that benefits of implementation of the Plan's effectiveness monitoring program, set forth in AHCP/CCAA Section 6.2.5 and without specific deep-seated landslide monitoring requirements, together with the benefits resulting from implementation of the other components of the Operating Conservation Program, are sufficient to meet ESA Section 10 approval criteria (see EIS section 1.3 and Master Response 8).

Response to Comment R1-170

The road assessment program is specifically designed to address all roads whether they are maintained and drivable, or abandoned

and overgrown with vegetation. Common sediment sources identified during the assessment include watercourse crossing, potentially unstable road and landing fills and hydrologically connected road segments that exhibit surface erosion and sediment delivery. The AHCP/CCAA Section 6.2.3 includes specific mitigation measures designed to control drainage and surface erosion from roads.

Response to Comment R1-171

The potential effects from altered hydrology are addressed in AHCP/CCAA Section 5.2.1. Impact minimization and mitigation, and provision of conservation benefits for altered hydrology are addressed in AHCP/CCAA Section 7.2.1.

Response to Comment R1-172

The sediment modeling in AHCP/CCAA Appendices F2 and F3 describes which sediment sources were addressed and which were not. If sediment input from roads does cause a significant secondary effect of bank erosion or mobilization of stored sediment, that effect would be expected to be distributed across the landscape proportionately to the sediment inputs from roads. In so much as watercourse crossings are expected to be the dominant source of sediment from roads, as shown on AHCP/CCAA Tables F2-2, F2-3, F2-4, and F2-5, the inclusion of relative density of watercourse crossings in various watersheds in the proposed prioritization system could reasonably be expected to address the possible secondary effects of this sedimentation. In addition, the treatment prioritization also addresses the possible secondary effects by first treating sites that have the highest potential of sediment delivery based on the volume of potential sediment delivery and also the likelihood that a potential site will fail and deliver sediment.

Response to Comment R1-173

As stated in AHCP/CCAA Appendix F2.4.1.1 #3, only some of the erosion estimates used in developing the Plan were derived from Pacific Lumber Company road assessments. Two of the four Pacific Lumber Company studies from which road erosion data were derived were actually from Humboldt Bay tributaries - Elk River and Freshwater Creek. Erosion and sediment delivery was measured from 73 miles of road in Bear and Jordan Creeks (Eel River tributaries) and 291 miles of road in the more stable Humboldt Bay tributaries (Elk River and Freshwater Creek), so most of the road data for determining past landslide frequencies is actually from the more stable terrain.

The steep Eel River terrain does display increased landslide sediment yields, and overall road-related sediment delivery compared to the Humboldt Bay terrain, and the data support this. For example, the unit sediment delivery from roads ranged from an average of approximately 850 yds^3/mi for the Humboldt Bay tributaries (Elk River and Freshwater Creek) to about 3,100 yds^3/mi for the Bear Creek and Jordan Creek watersheds in the lower Eel River basin. These numbers are not exactly comparable because the small differences in methodologies, but overall the Eel River sub-basins did have a higher unit sediment yield (by a factor of over 3x) compared to the Humboldt Bay tributaries. The relationship between Green Diamond's Plan and the Pacific Lumber Company's HCP is discussed in Master Response 6. However, to the extent that Pacific Lumber Company data have been employed, the Services believe the mix of Eel River sub-basins and Humboldt Bay basins, when averaged together, is reasonable to apply to Green Diamond lands.

Response to Comment R1-174

SHALSTAB has no relationship to the requirement for physical evidence of failure on roads described in AHCP/CCAA Appendix F2, section F2.4.1.2.1, for the sediment modeling purposes that are described therein. SHALSTAB has no relationship to road management, except that road construction through field verified headwall swales will be evaluated by a California-licensed RG or RPF.

SHALSTAB was not used to predict sediment volumes and delivery in the context of Appendix F2. Instead, SHALSTAB was incorporated into the Plan as an "off-the-shelf" screening tool intended to determine where Green Diamond staff will have to conduct field reconnaissance for headwall swales. SHALSTAB alone does not determine the existence of headwall swales. This is described in AHCP/CCAA Sections 6.2.2.1 and 6.3.2.4.

Letter - R2. Signatory -County of Humbolt.

Response to Comment R2-1

Comment noted. Thank you.

BOARD OF SUPERVISORS
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September 4, 2002

RE: Simpson Resource Company's Aquatic Habitat Conservation Plan

I apologize that my schedule did not allow for me to stay and address your panel in person. I wish to take this opportunity to submit my comments in writing:

- The Plan has a good blend of science and economics. The sustainability of the plan will keep Simpson productive and ensure that the County's economy stays healthy. It will also ensure care is taken of the resources and species that need special protection.
- The Plan keeps our water clean by focusing on sediment. Sediment has often been linked to fish and their decline. Simpson's plan aims to keep soil on the hillsides of their ownership. Also a major effort of this AHCP will be to address and fix legacy roads and ensure that current roads don't fail. Simpson will be spending $2.5 million per year on legacy roads, addressing nearly 48% of them within the first 15 years of the plan.
- The Plan has an impressive array of monitoring. Simpson has based their plan on the best science available after nearly 10 years of monitoring on their own properties. They conditioned this plan to look at the monitoring steps they'll be taking during the life of the plan. Should the standards of the Plan need to be modified or if the standards are improperly applied, the real measurements of the monitoring will reveal those, allowing for further steps.

R2-1

I thank you for allowing the public to comment on this plan. I would also like to thank all of the government agencies involved in the development of the plan and Simpson Resource Company.

Sincerely,

BONNIE NEELY
Fourth District Supervisor

BN/kr